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The MIDNITE SOFTWARE GAZETTE

Includes The PAPER

A BI-MONTHLY JOURNAL OF NOTES, REVIEWS AND ARTICLES

Doodle Graphics by Wayne Schmidt

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THE MIDNITE XPRESS NOTES

Midnite Meanderings

by Jim Strasma

OUR PUBLISHER, THE OLDFIELDS, HAVE MOVED

As sharp-eyed readers of Issue 20 have already realized, Midnite has a new subscription address: P.O. Box 1747, Champaign IL 61820. To go with that change, the subscription office also has a new telephone number: 217/398-1706. Be sure to note both changes, but especially the phone number. Although mail will continue to be forwarded from the former Mt. Zion address until next August, not so with phone calls. Much to our surprise, General Telephone has no way to provide you with the new phone number if you call the former number, now disconnected, no matter how much we would pay for that service. Nor are they willing to re-connect the line so we can attach an answering machine to give the new number. Since Bell Systems has always provided such services, this came as quite a shock to your publisher. One unfortunate consequence is that some of you have feared we've gone out of business. Definitely not! In fact, we actually paid taxes on corporate profits this year--$197 for Uncle Sam. At this rate, the shareholders will all be millionaires in, let's see, the year 16,982. Don't wait up.

OTHER CHANGES

Sharp-eyed readers may also remember that Issue 20 was labeled August-September, but this is marked November-December. Where's October? Alas, it was eaten by our new professional mailing service. As at least 100 of you know, we had horrid problems with losing names on our 8096 system when we switched from the slower **Silicon Office** for our mail labels to **Mail Pro**, and have now switched again, to old reliable, **The Manager.** At the same time, we switched to a printer closer to our subscription office, one able to also stuff and mail the completed copies of the magazine. All of this is good news, and is working very well now, but adds 3 weeks to the production cycle. Rather than have an October-November issue that arrived, if we're lucky, at the end of November, we decided to "lose" October. We hope the librarians among you will forgive us.

One benefit is that the switch to a mailing service saved us enough in postage that we won't need to raise our subscription rates when proposed postal rates go up again. For the first time, we are also now accepting 2 year subscriptions, and (while they last) sending a free Whole PET Catalog to anyone renewing for 2 years. Why two years? Simple--it cuts our work maintaining the mail list in half. The last issue in your current subscription is marked on your mail label each time, and your last issue will include a renewal notice, but don't wait for a reminder letter. There isn't any.

ON PHONE CALLS FROM MIDNITE READERS

With my "Commodore Clinic" column in RUN now being read by 200,000 people a month, it is utterly impossible for me to answer all questions by phone. On the other hand, I still enjoy hearing from Midnite subscribers, since you are fewer in number and provide so much information of value to both Midnite and RUN readers. I feel unbearably rude asking callers, "How did you hear about me?" before deciding whether or not to answer a question. Therefore, be sure to mention the Midnite before asking a question or I'll probably be unable to help you on the phone.

There is a moral here--when I was a youth, I dreamed of being popular, like my friends who had people calling them all the time. Now I have two phones, and it's common for both to ring at once. Be careful what you ask for--you might get it!

Commodore Notes

COMMODORE BEATS ATARI OUT BY BUYING AMIGA

It couldn't have happened to a nicer guy. While the rest of the industry has been loud in its praise of Jack Tramiel, and how he's going to make mincemeat out of Commodore, chickens have been quietly coming home to roost. First, there was Amiga, designers of a wonderful under $1,000 68000-based computer that promised a clear 80 column color display on an ordinary TV. Atari had bought first right of refusal on their technology, for $500,000, and it now appears the Amiga was the $1,000 Mac-alike Tramiel was rumored to be planning for delivery by Christmas. Only thing is, Amiga returned Atari's money two days before Tramiel bought it. Could be they'd heard about Kindly Uncle Jack. Worse yet, it turns out they've been bought by, guess who--Commodore! Naturally Tramiel has sued Amiga for breach of contract, but it doesn't look like there's any way he'll get that product on the market by Christmas, and thus far he hasn't even managed to get an injunction to keep it away from Commodore.

Meanwhile, some of the engineers who left Commodore to work for Tramiel apparently swiped part or all of the Z8000 multi-user machine Commodore was developing. Commodore is suing those engineers to keep them from developing any Atari products based on it. But that's not all the lawsuits. One of the things Tramiel didn't take care of promptly after buying Atari was paying their bills and honoring their many existing contracts. These people aren't waiting; they've already formed a creditors' committee to coordinate lawsuits that are already being filed. On top of this, according to a recent Infoworld, Atari was owed $300 million dollars when Tramiel bought it, and none of those people seem to feel like paying. Frankly, it looks like Tramiel got a lot less for his IOU than he'd thought, and soon the time will come for making payments on it. He reportedly is seeking to reopen negotiations with Warner Communications, but remembering all the unemployment compensation payments he socked them with in his first weeks on the job, I wonder how eager they are to talk to him.

Tramiel's ace in the hole is the 100,000 already-completed Atari 800XL's and 500,000 more in process. A market flood of these machines at $155 or so is well underway--a definite bargain price if the model survives and is continued. But that's a big IF. Three things (at least) can happen. One is that it will be a repeat of the VIC story--a huge success, allowing higher production and economies of scale and continued low prices. Another is that those sales will give him the cash flow he needs to design and produce an entirely different computer line. Or three, it won't work, and we will soon be reading an entirely different kind of article about Tramiel.

HOW WILL COMMODORE RESPOND TO ATARI PRICE CUTS?

Meanwhile, what should Commodore do? By the time you read this, Commodore's response will be obvious, but at this writing there are at least two choices. One is to match Atari dollar for dollar. The 64 costs less to build than the 800XL, and could surely win any discount war. The other would be to pull an Apple, and stay above the fray, simply not admitting the 800XL might be just as nice a machine as the 64, and perhaps asking about the support TI 99/4A owners get from retail stores these days. Had Atari and TI done that two years ago, I personally think they'd both still be around making money.

The problem with a price war from Commodore's point of view is the timing. With the new Plus/4 and 16 models just appearing, it would be misinterpreted. Most people would think the 64 was about to be closed out just like the Atari; that would become a self-fulfilling prophecy, robbing Commodore of its best machine at least a year before the natural time for its replacement. What would I have done in Commodore's place? Perhaps, keep the price up, and if Tramiel's prices started costing significant market

share, throw in something good for free, like an auto-modem. With Atari rumored to be thinking of a 128K replacement for the 800XL, I'd also put some heat under a rumored 64 update and give it at least 128K RAM, a faster processor and higher-capacity faster disk, with an optional second drive, 80 column display, CP/M, Basic 3.5, and a mode in which nearly all existing software could continue to run unchanged!

Without knowing how all this will turn out, I'd rather be working for Commodore than Atari right now. I still think it will be Commodore's Christmas, and expect them to be around to enjoy next Christmas, too.

NEW RESPECTABILITY

A popular question making the rounds now is, "Can Commodore survive as a respectable company?" Let me give a personal and recent testimony that says they can. On 4 week's notice, Ellen and I completely rewrote the 1541 Disk Drive Manual for Commodore this past August (it should be available by the end of the year). We are happy to report that Commodore indeed kept its promises: we were paid for the work in a timely fashion--and at one point Commodore broke what has to be a World's record for fixing and returning a Plus/4.

Contrast that experience with the reported philosophy of Jack Tramiel--until a company is screaming for its money, and ready to go to court, he figures he's got more use for the money than they do. Good luck, Atari owners!

GOODBYE

On the other hand, Commodore did make, in my opinion, one enormous mistake this Fall. They dumped most of the rest of their already small dealer network, including publisher Jim Oldfield's Micro-PACE Computers store in Champaign, IL. There are now reportedly fewer than 40 remaining dealers in the U.S. Everyone else must go through distributors. I'm sure Commodore had reasons for doing this (they always do), but I don't understand them. If the Z8000 machine and PC Clone are still planned, they'll need those dealers back; surely you don't think K-Mart can sell multi-user Unix systems? I also have serious doubts about Child World's ability to demonstrate an MS-DOS system, no matter how low its price. Micro-PACE had never wronged Commodore, went to great lengths to avoid troubling it, and has a nationwide reputation as one place you can still buy anything for any Commodore model. I know they'll try to preserve that reputation, even buying through distributors, but how long do you think distributors will stock parts for the SuperPET, for example? We are already unable to buy SuperPET manuals for our students; the publishers report it's out of print with no plans to reprint. To me, this seems insane; there's still nothing close to the SuperPET for educational use, and how much could it cost Commodore or Howard Sams to keep supplying it and its books?

THE END OF THE LINE IN SIGHT

I'm sure now that this will be the end of all the PETs, 8032's, 8096's, B-128's, and anything else serious in Commodore's U.S. line. With no dealer network, such machines couldn't be sold anyway, but it's a real shame. I'm still waiting to find a word processing machine within a thousand dollars of the 8032 that has half its power four years after it was introduced. Moreover, we had more repairs on twelve 64 systems the first month we had them than fifty PETs and CBMs needed in 3 years. Oh well, if you need any spare parts for an IEEE-488 bus device, get them now while they are still available.

Competitors Notes

IN OTHER NEWS - THE IBM AT

My, do I like the IBM AT! That is one powerful machine, and at a price that should drive the PC-XT off the market, along with many of the remaining clones and some of the Super Clones. It even has a usable keyboard.

TANDY'S PC-XT CLONE

I'm also looking forward to a $2,750 PC-XT clone due out from Tandy as you read this, as well as the soon-to-be-announced Tandy 100 replacement. Tandy's been trying to shed the Trash 80 image for years, and they've come a long way toward that goal. Although Apple gets all the credit for "leading edge" technology, many of the really important products first came from Tandy. Now that their computers no longer look like cheap model airplane kits (those horrid grey cases), maybe people will give them some respect. All that's needed is to take the TRS-80 label off the current models, and hire more clerks who know which end to plug in! (Ours here in Lincoln are now fairly competent, but one I met on vacation didn't even know how to turn on the Model 2000.)

KAYPRO

Kaypro is also offering quite a system these days. In Lincoln you can buy a 64K computer with dual disk drives plus 80 column monitor for $1095, complete with several of the best CP/M programs. That compares well with a comparable 64 system. For a bit more, Kaypro also offers higher-capacity disks or even a hard disk. Unfortunately, CP/M is becoming so unpopular that Kaypro had to drop its prices, but for someone who doesn't care about what's in "fashion" and wants low bucks, the Kaypro is worth considering.

APPLE

Apple's Steve Jobs was recently quoted as saying you'll be able to buy a Mac for half today's prices next year. That would be a nice but overdue change from Apple's previous pricing policies. One reason might be the newly-announced Fat Mac, a 512K RAM machine which may include a color display. (It was too much to hope for cursor keys.) Early reports on Microsoft's Mac Basic are that it is slower than Applesoft. A trickle of second disk drives for the Mac has started to appear, but most of the few available programs don't know about it yet. Early reviews on those remind me of the first offerings for the 64--painful. Mac sales had leveled off until recent price reductions on both the Mac and the][.

TROUBLE IN THE ENTIRE INDUSTRY

Meanwhile, the rest of the micro industry seems to be in real trouble--it may be finally "enjoying" the recession Ronald Reagan claims ended last year. Recent casualties in the magazine wars include: Compute's PC & PCjr, Wayne Green's jr and Microcomputing, and Softalk. To put that in perspective, Softalk started the same month as the Midnite, and within a year was 100 times larger. I often used to envy their success, feeling Commodore owners needed a slick magazine like theirs worse than Apple owners. I've no idea what went wrong, but no longer envy them. Congratulations to the Transactor and RUN. Both have had very successful growth as others declined.

COLECO

One last note: Coleco has now priced the Adam at a truly attractive price--absolutely free! K's Merchandise Mart here is offering a complete Adam system for $500, less a $500 college scholarship. It's to be paid in 4 installments, as your child finishes each of 4 years of college. Will Coleco be around that long?

Dealer Notes

WHAT HELPS A COMPANY RESPOND TO YOUR QUESTIONS?

A persistent gripe we hear from people who write some companies for help is that their letters are ignored, calls not returned, etc. As my mail increases week by week I'm developing more and more sympathy for such companies.

How do you get good-hearted but overloaded people to focus on your needs rather than on a dozen other similar letters of woe? A first step is to enclose a stamped self-addressed reply envelope. That saves your recipient at least a minute and 20 cents, both of which mount up in such places. The fate of any letter I receive which lacks this is decided in about 15 seconds--either it gets published or pitched, immediately. It's the same way with tiny envelopes. Given some big and some little envelopes, I answer the big ones first. Why? It's because it's tough to stuff a full reply into a tiny envelope and then step on it until it's thin enough for the post office to accept.

Next, a question I can answer from memory in a few words usually gets answered the same day. On the other hand, questions that take writing an original program of over a few lines that doesn't interest me, questions for which the reader could easily have found answers without writing, or that require extensive reference on topics not dear to me, may never get properly answered. Kitchen sink letters (those which ask about everything except the kitchen sink) are especially vulnerable; I may answer one or two of the easiest or most interesting questions and skip the rest.

However, all these techniques may still leave 6 out of a dozen letters. Which do you answer first? How about the one that lacked a stamp, but enclosed a dollar. Why? I needed money today, but wouldn't accept it without giving something in return. Yesterday, it was a letter that wanted help de-bugging a small program, and offered to pay for my time. It didn't take long or cost much, but the offer made the difference. Is that wrong? I don't believe so. If I didn't help so many people for free via phone and letter, I could write more, and would be paid for that, while still helping people.

The principle is simple--if you want a company to help you before many other people with similar needs, you must make the help you need easy to give, and make the giver (the clerk who actually opens the letter) feel appreciated in some way. -JS

CASE IN POINT

I purchased from a fine local dealer a Gemini 10X, the Info-Designs **G/L,** and Commodore's **A/R, A/P,** and **Inventory** programs. The incompatibility problem turned out to be the Cardco-Plus G interface with the accounting programs. The reports were not printed out in columns properly. However, the interface seemed to work OK with my word processor. I wrote to Cardco first in December; to date they have not answered any of the 3 letters, but did send me another catalog! I phoned them in December and January and was given the runaround. I'm still waiting for their return call. The dealer offered me another interface, TYMCAC's Connection, distributed by Micro-Ware. It seemed to work OK with the accounting programs, but not with my word processor, **Script 64.** The accented letters are all one row of dots too low, because the Connection prints regular type one row of letters TOO HIGH!! How's that for a bug? After much research and frustration, both for the dealer and myself, I settled on the Cardco-B. It works fairly well with the word processor and fair with the accounting programs. If I had any other choice, however, I would never purchase anything by Cardco or from Micro-Ware. The following August, the complete accounting system crashed. All back-up diskettes crashed also. Sure glad we kept the manual system in place! (I finally gave away the Cardco B, and am now using a Grappler CD. It seems fine.) -Kenneth Buser

FOXFIRE SYSTEMS

"Damages from Hurricane Alecia, coupled with recent economic setbacks and inadequate insurance, have left us unable to fulfill our obligations, and forced the temporary closing of Foxfire Systems, Inc. We are currently attempting to regroup, and are exploring several alternatives that may allow us to resume operations." -Ronald and Angela Wray, 3811 Newton, Pasadena TX 77503 (713/473-6723)

NEW NEWSLETTER

This week's laugh is a press announcement of a new Personal Computers at Work newsletter you can buy. It will be bi-monthly, 8 pages long, and cost $23 a year. Let's see, that's the same price and frequency as the Midnite for one eighth as much work. Tell you what--anyone who writes for their address, please enclose $161 for the Midnite, to make our subscription cost equivalent with "PCW"'s...!

NEW TEXAS COMMODORE REPAIR SERVICE

When Commodore closed down its Dallas Texas operation (music and speech synthesis research, repair service, etc.), former Commodore employees Keith Larson and Tommy Baker formed their own company, B & L Computer Service, specializing in all Commodore computer repair. Contact them at 4552 Brassway, Dallas TX 75236 (214/337-4876).

PROTECTO

Mail order dealers like Protecto meet a real need. I live near Charlotte NC with no Commodore dealer except for K-mart. I and several friends have purchased 64's, 1541's, and lots of software from Protecto. We've found prices lower than K-Mart, even disregarding "software bonus coupons" and their selection of software is broader than most dealers. Their telephone order takers have been courteous and well-informed. Usually I've received delivery within 7 days of a phone order and the sole problem I had with a program was resolved by immediate replacement of the diskette. I'd certainly prefer dealing with a full line Commodore dealer, but Protecto is the next best thing for folks in my area. -Leigh Armistead

[EDITOR'S NOTE: If you're interested in Protecto's big ads for the B-128 system, be sure to buy any software you need at the same time and know that Commodore produced only one run of about 30,000 machines in the U.S. Read more about the B-128 in the Articles Sections and under User Group Notes. -ES]

TYMAC

When I wrote letters to Commodore, Okidata and Tymac [about how to get elite type using Easy Script, the Connection interface and an Okidata printer], I received an immediate reply only from Tymac (in less than a week). I subsequently wrote another letter to them with further questions and again received immediate response. When my interface later failed me, I sent it to them (over 90 days past purchase). Within 10 days, I received it back in excellent order, and it has worked well ever since.

In short, I am very pleased with **The Connection** and am totally astounded by the responsiveness Tymac has shown me as a customer. During this exchange, they sent me two enlightening help sheets entitled "Using the Connection With **Easy Script**" and "Switches." I suggest you recommend anyone else with problems using **The Connection** to obtain them from Tymac. -Robert R. Hayward

Disk Notes

Cassette Users:

ELIMINATE CASSETTE LOAD ERRORS:

If you get a load error and cannot get a program to load no matter what you do, try this. As long as the program lists out completely, the only thing wrong is that you need to set the basic pointers. Type the following in immediate mode (all on one line if you wish), pressing return after each line.

```
X=PEEK(832):Y=PEEK(831)
POKE46,X:POKE48,X:POKE50,X:POKE45,Y:POKE47,Y:POKE49,Y
```

Save the program to cassette again and then run the program. If everything was done correctly, the program should load and run just fine. To minimize load errors, be sure the cassette head is clean and don't store your tapes near a source of magnetism such as the TV, monitor, or telephone. -Bruce Sisler (in Mid-Missouri Commodore Club newsletter)

Disk Users:

ON 1541 DISK DRIVE FAILURE:

I had a problem with one of my 1541 disk drives, in which both lights suddenly go out, although the drive motor continues. When I troubleshot it, I found the bridge rectifier supplying the 5 volt side of the power supply had gone intermittent, not allowing the rectified current to pass through. (The drive motor continues to work, because it is supplied by the 12 VDC side of the power supply). I just removed the bad bridge rectifier and replaced it with another from Radio Shack. I chose one with 50 PIV, 25 amp capacity, which will more than carry any possible load on the 5 VDC side of the power supply.

I noticed that when Commodore came out with the short board for the 64, they replaced the two bridge rectifiers (the 5 volt and 12 volt sides) with ones that now have the same part number. I suspect the 5 volt side rectifier is running near its current carrying capability limit (it runs hotter than the 12 volt bridge rectifier), and this is why some fail. -Steven Walley

[Thank you Steve. We had a dead 1541 at Lincoln College with the same symptoms and your cure worked. However, I used the smaller 4 amp rectifier Radio Shack also sells. It is a direct replacement, whereas the 25 amp unit requires a bit of wiring. -JS]

ON 1541 DISK DRIVE SPEED DILEMMA:

Here is some more on the 1541 disk drive speed dilemma. You can get a 15% increase in speed by plugging the new ROM inside. I found out by examining a newer drive that the new 1541 and the old 1541 have the same logic board, EXCEPT that two resistors and 4 jumper wires had been added to the new one. -Mark Niggemann

[EDITOR'S NOTE: Older here means the Rev.'C' short board 1541's. -JS]

Wanted: A HARD DISK FOR THE 64

Q: There seem to be plenty of cheap hard disk drives around. Commodore's drives would be the easiest way to go but expensive. Has anyone interfaced a non-Commodore hard disk to the 64? -Nick Brieger

A: Jim Butterfield reports a new dual removable media hard disk was announced at the London PET Show in June - not from Commodore, but it looked like the first useful hard disk he's seen for the 64. Readers, what have you used? -JS

Education Notes

by Elizabeth Kaspar

COMMODORE'S TRY AT WOOING THE EDUCATIONAL MARKET:

No doubt trying to recover some of the educational market this April, Commodore offered educational institutions matching equipment grants. More than 600 proposals were submitted, and probably more would have been submitted had there not been such a short lead time and a lack of publicity. Of these, 82 were funded. In addition to computers, disk drives, monitors and printers, each school was to receive a MODEM and become part of Commodore's educational network. Edison Junior High School in Macomb IL, one of the notified winners, has busily installed its Commodore lab in time for the September opening.

Eight-two new Commodore labs, however, cannot begin to challenge Apple's supremacy in the schools. At present, Apple controls more than 50% of the school market, followed by Radio Shack. Commodore is third with about 16%. Many schools already have Apples, and they are understandably hesitant to add any but Apples since this would necessitate two sets of software and a great increase in software costs and bookkeeping. The fact that Commodore offers more for less than the cost of the Apple is not sufficient reason for a switch at this late date. And neither is the fact that much of the educational software for Apple is now available for the 64.

Scholastic, a major educational publisher, has translated only about half its offerings for the 64. They have no plans to make their monthly diskette magazine, Microzine, available for Commodore. Microzine is a clever idea, cleverly packaged for the Apple with a diskette and booklet (approximately 48p.) per month. On one diskette there are usually five programs, three educational, plus a game and some puzzles for $40 per issue. It is suitable for first through ninth grade, usually including a "Twistaplot Story" (reader determines choices influencing the course of the plot). It can, therefore, be read repeatedly, each time becoming a different story. The price, however, is rather steep for a "pig in a poke" each month. As a teacher, I would prefer to spend my budget on programs that specifically fit my curriculum. Scholastic could probably increase sales if they offered several diskette options to teachers with programs more curriculum-oriented to social studies, science, etc. Aiming at such a wide market (ages 10 up) hits no specific group.

VOICE SYNTHESIZERS WITH 64'S TO TEACH ENGLISH AS A SECOND LANGUAGE

A Commodore lab for foreign students needing intensive English instruction has opened at Western Illinois University. For eight years, the WESL Institute has attracted students from all over the world who come to learn English well enough to study at U.S. universities. Recently, however, some WESL classes have taken on a new look. Students are honing their English via language drill and practice programs using voice synthesizers and also, through the innovative use of adventure games. Students are put on teams of 4-5 and compete against each other in such adventures as **Suspended** and **Deadline.** Only English, of course, may be spoken! So popular is learning via the 64 that students wait in line for a turn at one of the computers, and arrangements had to be made for evening hours. For more information, contact Professor Macey McKee, WESL, WIU, Macomb IL 61455.

BASIC:

ARE BASIC-AID, POWER-AID AND MICROMON USEFUL?

Q: What do Midnite readers think about **Micromon, Basic-Aid, or Power-Aid**? Do you use it, like it, dislike it? Has anyone made any improvements? -Arthur Cochrane (Route 1 - Box 291-I, Jackson SC 29831)

Hints: MORE DOS WEDGE

The Wedge has the ability to change the default drive number it uses. The command is **@#9** to tell the Wedge to default to drive number 9.

You can also send commands via the Wedge from within a running BASIC program. To do this, first type @ or >, and then enclose the command IN QUOTES. For example, to initialize the drive and list the directory from within a program, enter:

```
10 REM  INITIALIZE DRIVE
20 @"I0":FOR X=1 to 1000:NEXT:REM SEE THE (DISK) LIGHT?
30 @"$0:*=S":REM DISPLAY ONLY THE SEQUENTIAL FILES OF THE DIRECTORY
40 END:REM ALL DONE
```

-James Borden (in Eight Squared)

65C02 MICROPROCESSOR INFORMATION?

Q: Does anyone have data sheets, instruction set information, anything on the 65C02 microprocessor? Who makes it? -F. Arthur Cochrane, Route 1 - Box 291-I, Jackson SC 29831

A: The Rockwell 65C02 is a CMOS version of the 6502, with some added instructions. It is used in the Apple][-c computer, and I have heard it is a drop-in replacement for the 6502 on other computers, but no one has told me they've actually done it yet. This is one time VIC owners have it over 64 users. Since the 64 doesn't use the 6502 like the VIC does, it can't easily be used with new substitutes. Anyone have more information for Arthur? -JS

MON ENT TRICKS ON SUPERPET

In BASIC and APL, you can actually return to the language via Z; the others don't quite cut it. SYS 6131 in BASIC or [box] SYS 61631 in APL do the trick. If the MON command is given, the text reverts to editor format; hence, to learn how BASIC is tokenized, it is imperative to get into the monitor via call (or else read a tokenized version from the disk via DISPLAY T & S). -Gary Ratliffe

COMAL:

WRITE A LETTER

According to some user groups who heard him at the MARCA fair last summer in Hershey PA last summer, the man who could decide whether to release COMAL in the U.S. is PAUL GOHEEN, if he received 3,000 letters. Paul reportedly likes COMAL, but doesn't think the American public will appreciate a language simply because Europeans use it. Now that Len Lindsay is importing COMAL cartridges diretly, it may not matter so much, but anyone with strong feelings on the subject may still write Paul as follows: Mr. Paul Goheen, Director of Software Development, Commodore Business Machines, 1200 Wilson Dr., West Chester PA 19380. However, be fair. Don't promise to buy a $100 COMAL cartridge unless if you wouldn't really do it.

COMAL 2.0 CARTRIDGES TO BE AVAILABLE BEFORE CHRISTMAS

Commodore has started production on the final COMAL 2.0 cartridge. Although it's the same size as Commodore's 8K games cartridges, it holds a full 64K ROM with the complete COMAL system (like doubling your computer's power). In addition it has an extra empty socket inside the cartridge that will accept an 8K, 16K or 32K EPROM to hold a user-supplied COMAL program.

The first cartridges are being produced by Commodore Europe for delivery to start November, 1984. Later, Commodore International will produce them in Hong Kong. Initial U.S. distribution will be by the COMAL Users Group, U.S.A., Limited. We have ordered half of Commodore's first production run of 1000 cartridges and are now taking prepaid advance orders. The price is $103 postpaid. As an bonus, anyone sending us their prepaid advance order now will get absolutely free: 2 books, 2 demo diskettes and a reusable custom molded case ($75 value). -Len Lindsay

Mindy Skelton reports in Eight Squared: "For those of you who may be wavering, let me add that my 2.0 cartridge is probably the best thing I've ever bought for my Commodore. I can't imagine anyone using 2.0 and not wanting it."

Machine Language Monitors:

HESMON BRANCHING BUG

There is a serious bug in **Hesmon 64** when assembling those branches near the legal extremities of the page. Bugs exist in both forward and backward branches. First, **Hesmon** gives an error and refuses to accept the legitimate command 'A 0900 BNE 0981' [and] 'A 0900 BNE 0980'. Conversely, not only does **Hesmon** accept the illegitimate command 'A 0900 BNE 0880', but changes it to 'A 0900 BNE 0980' (a forward branch!). The same is true for 'A 0900 BNE 0881', which is changed to 'A 0900 BNE 0981'. Be careful when branching with **Hesmon**! -David Lovelock (Catalina Commodore Computer Club)

Low-Level Languages:

CP/M PROBLEMS

Jim Butterfield reports the new 'Rev. 8 VIC II' chip may be behind recent problems running cassette-based programs and CP/M programs on current 64's. -JS

Modem Notes

by Ross Black via Jim Oldfield, Jr.

Note: Ross Black sent this column to JO's BB via MODEM as a **Paperclip** file.

BBS NEWS

The biggest news in Commodore BBS circles is the new Punter download and upload format, **C1.** It has been tested online for about 2 months on the PSI/WordPro board. It is so much better than the old format that several boards have jumped the gun and patched the format into their old versions. SYSOP's wishing to know how to add the C1 format to legitimate copies of Punter's BBS.64.1, check the files on the GENERIC Board.

Punter boards seem to be cropping up all over the place. I am having trouble keeping up with the new ones. If you start up a board, be sure to post a notice on several of the boards around the country to spread the word. -Ross Black

The Users Port announced in their September 1984 issue that Kramers Korners BBS (213/259-8437) is dead, because the SYSOP (Valerie Kramer) could not prevent software pirates from using the board and did not want the legal responsibility for their activity. Fellow club member John Bentley announced his BBS was available for use from 7pm to 6am at 818/345-7839. Let's hope he's not faced with the same problem! -ES

KNOWN WORKING PUNTER BOARDS

Although I have tested almost all these numbers, errors do creep in, phone numbers do change and boards come and go! It's your money, so be sure to check for a carrier when calling any of these or any other MODEM numbers. Blind auto dialing will give the hobby a bad name and can cost you lots of money in long distance. If you have any corrections or additions to this list, you can contact me on any of the NEOCUG boards, or the PSI/WordPro boards. On the NEOCUG boards, send mail to NETOP, or mail hard copy to: Ross Black, 3260 W48 St., Cleveland OH 44102

Board Name	ST	Phone	Hours	Remarks	SYSOP
Alberta	AB	403/466-7656	M-F 9p-6a+S&S		
CUTE	CA	714/532-5698	24 Hours	C	
Genesis	CA	714/777-4348			
Diamon Bar	CA	714/861-7268	24 Hours		
Twin Board	CA	714/554-7104			
Busy Signal	CA	714/786-4648			
Washington	DC	202/244-5349	24 Hours	C	
TMCC	IL	312/587-3084	24 Hours		
Micro-Pace	IL	217/356-1885	9P-9A+Sun	C	Jim Oldfield
CBM BBS	IL	314/372-5504			
Video King	IL	312/674 6502	24 hours		Gene Alper?
Lynx Line	IL	217/735-3331	3P-11A+S&S	C	Jim Strasma
AVC Comline	IN	317/898-5027	24 Hours		
RFComline	IN	317/255-5435	24 Hours		Tim Renshaw
KCCUG	KC	816/356-2382		R	
BBS#1	MO	314/741-2514	5P-9A+S&S		
CBM Commu.	MO	314/867-6950	24 hours		Tony Ott
Winston Salem	NC	919/765-3892	24Hours		
NEOCUG #1	OH	216/942-3569	24 Hours	C M	Ross Black
NEOCUG #2	OH	216/662-8005	6PM-6AM Only	C M	
NEOCUG #3	OH	216/473-7596	9P-9A	C M	

NEOCUG #4	OH	216/252-8690	24 Hours	C M	
Oki Software	OK	214/996-6808	24 Hours	C	
PSI/WordPro	OT	416/624-5431	M-F 7p-9a+S&S	C	
CFTR	OT	416/366-2069	M-F 9p-8a+S&S		
Hamilton	OT	416/560-2112			
RTC	OT	416/884-4619			
London	OT	519/472-5354			
ASC Bulletin	OT	807/345-7199	M-F 6p-8a+S&S		
NWPA	PA	814/371-4194	24 Hours		
LVCUG	PA	215/770-0774	24 Hours	R	
Puerto Rico	PR	809/781-0350			Julio Martinez
Salt Lake Cit	UT	801/277-3913		Closed	
NWCUG	WA	206/743-6021	24 Hours		Dean Johnson
Generic	WI	414/282-4181	24 Hours	R SYSOPS	
Connection	WI	414/282-9308	24 Hours		
CUSH	WI	414/554-9520	24 Hours	R	Tim Tremmel
SEWCU	WY	307/635-3401	24 Hours		

Codes:
C Also uses New Punter C1 format.
R Restricted board. Contact Sysop for user rights or see log on notice
M Also uses Midwesterm Protocol for downloads also

Also add (via the WIPUG Newsletter):

WIPUG, Quincy IL	217/224-7279	after 5pm CST	Bob Morris

COMPUSERVE UPDATE:

Compuserve has changed its billing policy; it has dropped direct billing and only accepts credit cards or automatic draft withdrawal. As a result, Compuserve recently turned down a friend of mine as a subscriber because he doesn't believe in credit cards and his rural savings & loan association doesn't allow auto-drafting. Living in rural west-central Illinois, there aren't any toll-free BBS's to call either, making the money he spent on a MODEM and terminal software just wasted.

They have also remodeled the SIGs (Special Interest Groups). The VIC SIG (CBM-962) has been changed to The Creative Corner, and now includes user groups as well as VIC owners. The C-64 SIG (CBM-963) remains intact, but with a few minor changes and a new name of The 64 Forum.

CIN's biggest asset is its crew of SYSOP's. These people are great: always there with a quick return on all inquiries. Thanks Betty, Wayne Deepak, Barb, Deb and the rest. -Mike Stout

A SUPERPET AS A TERMINAL?

Q: It would seem that the SuperPET I own is two powerful and expensive to be used as a telecommunication terminal. I have considered purchasing a VIC 20 or 64 (or Plus/4) to communicate and download programs to my 8050 and run them on the SuperPET. Would SuperPET run these programs? -David Briggs

A: A BB has been developed for the SuperPET. Contact the SuperPET USer Group (c/o Paul Skipsi, Box 411, Hatteras NC 29743) to find the BB and a terminal program for the SuperPET's RS232 port. They will cost far less than adding a 64, etc. -JS

VIP TERM TIPS

To use VIP TERM to download for a Punter board, set your protocol to the slow send and space parity. Dave Hammond reports that he and a friend have sent data from VIP to VIP at 600 baud!! Dave says to set to half duplex and the baud rate to 600. He said he transfered several files with no trouble. -Ross Black

STARTING YOUR OWN BBS

If you are interested on starting your own board, check the Bulletin section of the PSI/WordPro board for information. To run a Punter board, you will need:

1) An IEEE Disk Drive (MSD Dual, CBM 4040, 8050, 8250, 9060, 9090)
2) An auto dial/auto answer modem (a CBM 1650, Westridge, or Hayes Smart Modem with a VIC 1011A or equivalent RS-232 interface)
3) An IEEE interface (get the **C64-Link** or **BusCard**, but neither the MSD interface nor the **Interpod** will work)
4) Lots and lots of time!!!! -Ross Black

PUBLIC DOMAIN MODEM PROGRAMS

You may cut your costs by starting with one of the public domain BBS programs, as most of them will work with the 1541 or other drive. There are several very good public domain terminal programs that are better than anything you can buy. You can get copies of most of the following programs at many Commodore dealers, most users groups, BBS SYSOP's, or by sending $15 for a diskette of modem programs to Ross Black at 3260 W48 St., Cleveland OH 44102.

DISKTERM: With it's variations, it is one of the best terminals for working the Punter boards. It features a list of 40 phone numbers to choose from, which can be changed to suit the user. It will auto-dial a selected phone number until it gets a carrier. When a carrier is detected, it will ring a bell four times on your monitor and go to terminal mode. It can send commands to the disk, look at the directory and has an on-screen elapsed time clock. There are several people reworking it for the new C1 format.

TERMINAL.64: This is the granddaddy of Punter format terminals programs for the 64, converted by Keith Peterson. Be careful, as some versions of this program will not upload properly.

MIDWESTERM: Special terminal program that can be used as either a BBS or as the terminal for it. Does not use Punter protocol, but is supported by a few Punter boards. It is very fast and great for sending files between users. Makes a nice download and upload Mini BBS with a chat mode, look at board directory and is password protected.

EXPRESS LINE: A Punter format up and download-only program. Makes a nice Mini-BBS.

TERMINAL.C1: By Steve Punter. The first of the C1 terminal programs. Can download from the new C1 boards, but not from the older Punter boards.

TERMINAL.C1.8: From the folks at the CUTE Board. For the new C1 boards only!. Features a 35K buffer for saving incoming text for later printing or saving to disk.

TERMINAL.OTT or PROTOCOL.10 From Tony Ott (SYSOP of the Commodore Communications board). This massive terminal program features 10 different protocols for up and download. It still has some bugs, and is being improved. Works with a Hayes Smart Modem. -Ross Black

[NOTE: As mentioned in the M#19 review, publications that list this program as free are now incorrect. For instance, reader William Pommering reports he sent Tony a blank formatted diskette, as stated in David and Dorothy Hellers' book, Free Software For Your Commodore 64 VIC 20 PET CBM. Ott didn't deliver the program, and also didn't answer any of Mr. Pommering's letters, explain the $7 charge or return the diskette. Eventually, Pommering reports the author, David Heller, did try to intercede, for which he was grateful. -ES]

THANKS FOR YOUR USER GROUP NEWSLETTERS!

Our thanks to all the user groups that send us their monthly newsletters. They are one of our best sources of information, and as we share (with credit) the best hints and reviews found there, we all benefit. We notice that some newsletters are now copyrighted, and others have lengthy instructions on how to give proper credit. Unfortunately, we can't publish copyrighted material without permission and haven't the room for more than brief listings of sources. Therefore, if you would rather we not quote from your newsletter in our usual fashion, please simply remove us from your newsletter mailing list. The only copyrighted newsletters we quote from are those which gave us permission to do so. If you want to withdraw your permission to reprint, just remove us from your mailing list and the problem is solved.

While we're at it, we should point out again that everything in the Midnite is heavily edited for clarity and conciseness. We frequently compress 4-page reviews into 1 paragraph, believing there is already too much literature published; people should not have to read anything non-essential about any one product or topic. If you would rather we publish your words as written or not at all, our answer is "thanks anyway."

On the other hand, if you want Midnite to spread the word about good things discovered in your area, just send a copy of your newsletter to our Lincoln address. And more than one budding author has learned a great deal about writing for publication by comparing their original work with what we published. A key difference between Midnite and other magazines is that we are willing to polish even a very rough article if it has something important to say. Most major magazines receive so many unsolicited articles that any visible faults assure rejection. (No, no one has complained about any of this. We just don't want any unpleasant surprises.)

Going the other way, we normally approve all requests to reprint single articles and reviews from Midnite, so long as it gets proper credit. (We hope the reprints will serve as a free ad.) To our knowledge, no company or user group has abused our trust in this, for which we thank everyone. -JS

National and Specialty Group News:

B-128 USER GROUP ANYONE?

I am interested in temporarily coordinating some B-128 information and writing it up for Midnite for a couple of issues. If you want to send me something contact, Gary Greenberg, 355-10M Sound End Av., New York NY 10280.

[NOTE: With 30,000 machines produced for the U.S. market, this is a good candidate for a national user group - or perhaps a "section" of the Commodore-sponsored group described below. Anyone interested in helping Gary organize something? -ES]

COMMODORE 8096 USERS

Since I got my 8096, I would be interested in communicating with other 8096 owners. What software do you use and like or dislike? What do you use it for? Which is more powerful, COMAL 2.00 or USCD Pascal on the 8096? -F. Arthur Cochrane, Route 1 - Box 291-I, Jackson SC 29831.

COMMODORE-SPONSORED NATIONAL GROUP?

Looks like Commodore's getting up its own users group, and recruiting through Power/Play Magazine. Have any of you joined yet? If so, have you formed an impression of the value of the group? Though it could hardly be very independent, it could be quite beneficial if well supported by Commodore. Sign up by sending $10 to: National Commodore Computer Club, 1200 Wilson Dr., West Chester PA 19380. The organizer is Betsy Byrne, of 6209 Leslie Pl NE, Albuquerque NM 87109, a frequent writer for Power/Play.

MARCA

Eight Squared now reports that **MARCA [the Mid-Atlantic Regional Commodore Association]** now has 60 member groups and a total member ship of over 6000! "By every criterion", last summer's first MARCA Commodore Users Computer Fair at Hershey, PA, was a "tremendous success. More importantly, there was a real spirit about the affair that made it a joy to attend." Attendance totalled 1200 people on Saturday and 1000 people on Sunday. The MARCA board is now planning the next fair for July or August of 1985, to be held somewhere in the triangle formed by Harrisburg, Philadelphia and Washington, D.C.

UNITED STATES COMMODORE USER GROUP

I recently received two letters (and a Midnite subscription) from Rich Tsukiji of 1385 Cleveland Loop Dr., Roseburg OR 97470, and discovered he is the "Prez" mentioned in the United States Commodore User Group newspaper. Continue to contact him and the group at P.O. Box 2310, Roseburg OR 97470. One reason his name didn't appear in their last newsletter is to avoid free publicity until after the election since he is running for public office, and isn't supposed to get any free publicity.

Here is some more info Rich supplied about the group: USCUG is a non-profit group sponsored by the Computer Education Resource Center, Inc. As of Sept. 14, it had 6,527 at-large members, and 7,243 associate members. What sets them apart from other user groups is consumer assistance. They will act on behalf of members to resolve problems with companies. A committee of 68 members and a board of 8 members select products for approval and endorsement. The group adds its own warranty to any from the maker, and will apparently refund a member buyer's money if the company won't.

I especially admire his group's candor in discussing warts on the industry. Micro Spec, Info Designs, and U.S. Technologies are listed in one issue's "black sheep pen", which seems fairly self-explanatory (and matches my own perceptions of the two I've heard about). He also issued a useful warning about a company called Compu-Chart, headed by a William Bucker, which reportedly offers to write favorable product reviews and send them to magazines in return for a $225 fee. Rich also warns never to buy a serious program that can't be backed up unless a spare copy can be purchased. I agree 100% that replacing a dead diskette isn't good enough. Without a spare, your business could be down the tubes in the time it takes to get a replacement, and that's assuming the company is still in business at the same address when the need arises! Good work, Rich, and keep it up. -JS

MEDICAL USER GROUP

Input/Output (newsletter for the Phoenix Arizona VIC & 64 Users Group) reports that a medical group called **Mount Olive Soft**, whose purpose is to share technical information and Commodore 64 programs, is looking for members. If you are in the medical field and interested in this group, you may contact Robert S. Meyer, M.D., 311 W. James St., Mt. Olive NC 28365.

Local Group News:

CALIFORNIA

SPHINX lives!: Back in 1979 I joined one of the first Commodore user groups in the country, Sphinx. I thought they'd disappeared 4 years ago, until their current head wrote in to RUN about one of my Commodore Clinics. Their suggestions have already been made by others and published in later Clinics, but it is good to know the group is still around. The current address, per Doug Barnes, Managing Director, is: Sphinx Society, 22091 Young Av., Castro Valley CA 94546.

ILLINOIS

Mike Stout is the new president of the **Central Illinois PET Users Group (CIPUG).** Contact him c/o the Illinois Department of Transportation, 2300 S. Kidrsen Parkway, Springfield IL 62764. The last CIPUG meeting feature former Commodore chief engineer, Bob Skyles, now of Skyles Electric Works.

The **McHenry County Commodore Club** was formed in 10/82 to assist persons with VIC and 64 computers. We have 90 paid members and publish a monthly newsletter that is expanding to 2 sheets. We meet at Crystal Lake Ambutal on Rt. 31, 1/2 mile north of Rt. 176 **in Crystal Lake.** Contact John B. Katkus, 227 E. Terra Cotta Av., Crystal Lake IL 60014 (815/455-3942 after 6pm)

The **Sauk Valley Computer Club** is hosting their 4th annual computer show at the Northland Mall, East Lincolnway **in Sterling, Illinois,** on Saturday, January 12, 1985, from 10am-9pm and Sunday January 13 from 11am-5pm. Admission is free. -Vinus Williams and David Needham

MICHIGAN

The Lansing Area Commodore Club (LACC) has been in existence for 1-1/2 years and have over 240 members. Our meetings are held monthly on the second Thursday at All Saints Episcopal Church, 800 Abbott Rd., E. Lansing MI from 7-9:30pm. Contact President Jae Walker at P.O. Box 1065, E. Lansing MI 48823-1065

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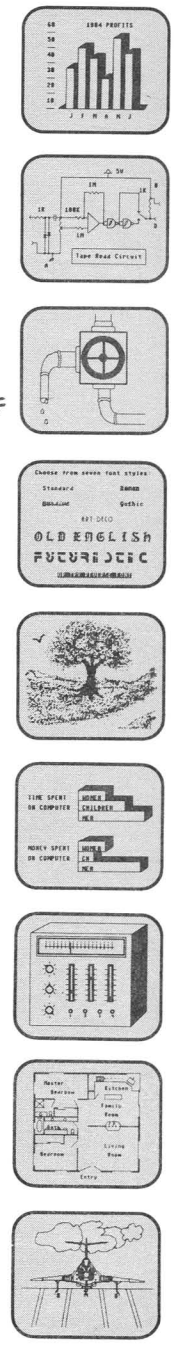

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MAKING SCREEN INPUT INVISIBLE:

Want to make screen input invisible, such as a password, so that it cannot be seen by unauthorized persons? Here is some BASIC code that will hide data on the screen:

```
10 CC = PEEK(646):REM CURSOR COLOR
20 POKE 646,PEEK(5381):REM CURSOR COLOR SAME AS BACKGROUND
30 INPUT PW$:REM INPUT PASSWORD FROM SCREEN
40 POKE 646,CC:REM RESTORE CURSOR COLOR
```

-(in CCC of Toledo Newsletter)

WHAT DOES A DEAD SCREEN MEAN?

Usually a dead screen means a blown fuse. Do not return the monitor or television for a checkup until the fuse has been checked. To change a fuse, remove the 3 screws beneath the bottom front of the computer (after the computer is unplugged) with a Phillips screwdriver; the keyboard can then be lifted, detached, and propped up behind the computer. No wires need be removed, since the visible wires are long enough to do that. The fuse is located on the right side of the machine about two inches in from the Off-On switch. Check the fuse and replace it if necessary (an automotive fuse of the same rating will do). If the fuse is not blown and there is no power light, the power supply may very likely be the problem. This can be determined by applying multitester leads to the pins of the power supply. You should read 9VAC between pins 6 and 7. Pin 5 should read +5VDC with respect to pins 1,2, or 3 -ELM). -John Schleppenbach (in WIPUG Newsletter)

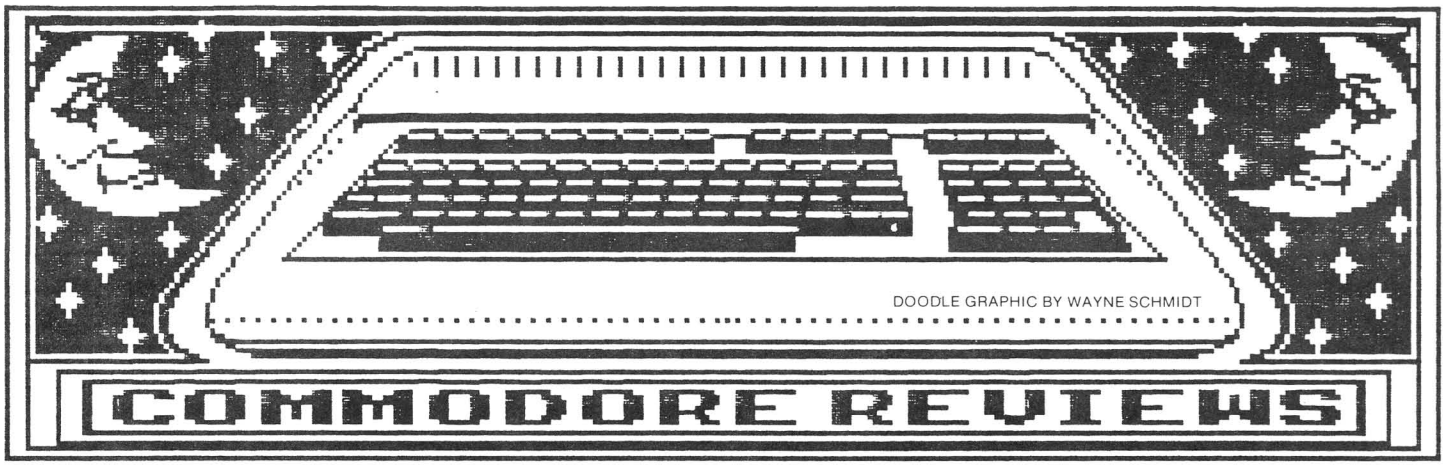
WHEN SPARKLE STILL WON'T GO AWAY:

To those who still experience sparkle after the "capacitor fix" has been installed, your character ROM is responding too slowly. Just create a "faster" character generator by copying the character generator ROM to EPROM and installing the EPROM in the 64. -Jay Renard (in Comm'Putoy Cult)

Wanted: A REVIEW OF VIDLINK:

Q: Saw an ad on **Vidlink**, a computer-videodisc system. What made this ad interesting was that the computer involved was a 64, the company involved was Digital Research (a hardware/software biggie on the 64! Wow!), and the color ad appeared on the inside cover and first page of Infoworld! Now, can somebody review **Vidlink** for Midnite? -Dan Gaydosh, Crystal Lake IL

A: Yes, after someone gets one and reports to us! -ED



Book Reviews

This month's collection of books includes several of the best we've ever found for Commodore owners, along with the usual also-rans. Read on....

ALL ABOUT THE COMMODORE 64: VOL. 1, by Craig Chamberlain, for the **64**.
$13 partly ringbound book from Compute Books, Box 5406, Greensboro NC 27403. 1984. 289p.

This presumptuously-titled volume is much like its ring binding--not quite all there. Though it claims to be "everything you need to know about Basic to effectively program your Commodore 64," I can think of many topics not covered, most notably disk and printer files, but also such things as the non-randomness of RND(Ø) on the 64. Accuracy is another problem--I found 7 factual errors in the first 3Ø pages. This is nothing new in a Compute Book, but I hate to see beginners misled. My final criticism is that Chamberlain has an entirely different philosophy of teaching Basic than I. He teaches Poke right after Print, followed by multiple statement lines, before he teaches about variables and assignment, and saves Input for Chapter 1Ø. Worse yet, his first suggestion, before introducing the keyboard, is that readers type in and run Compute's automatic proofreader program. How he expects that is beyond me, especially when he's already stated Loading and Saving of programs can wait until later. Does he expect them to type it in each day? Equally unbelievable is his first sample program, still before the keyboard introduction, which uses CHR$(), POKE, DIM, FOR-NEXT, READ, AND, PEEK, and IF-THEN. Anyone who can make sense of that doesn't need the book. What will really happen is that a Poke will go awry, the program will fry, and the user will skip the whole section, which is just what I recommend. Anyone interested in structured programming will have to look elsewhere.

In spite of all these problems, I do like some aspects of the book very much. It has a fine summary of key things to remember about Basic at the end of each section. These would make excellent lecture notes. It might also serve as a reference for the self-taught hacker who has already figured out most of Basic. Possibly recommended for teachers who can recognize its errors, but I wouldn't let a beginner near it. -JS

ANATOMY OF THE COMMODORE 64, for the **64.**
$20 paperback from Abacus Software, Box 7211, Grand Rapids MI 49510. 1983. 289p.

Anatomy of the 64 has become an important product for Abacus, outselling many of the programs that gave them their start. Its best feature is a full disassembly of the Commodore 64's ROMs, complete with extensive comments. However, Anatomy also includes brief introductions to machine and assembly language programming, and makes a good, if brief, attempt to explain the sound, graphics, and I/O chips in the 64, even to the extent of covering the use of the RS232 channel. Originally written in German, the English translation is well done for the most part, making for a very readable book. It is not, however, for beginners--the pace is much too fast for someone who knows nothing about machine or assembly language. Skilled users, on the other hand, will find its full disassembly quite useful when writing machine language programs. If only the binding would allow the book to lay flat in use! Recommended for serious machine language programmers. -JS

ANATOMY OF THE 1541 DISK DRIVE, for the **1541.**
$20 paperback from Abacus Software, Box 7211, Grand Rapids MI 49510. 1983. 322p.

What Anatomy of the 64 is to the computer, Anatomy of the 1541 is to the drive. Like its sister book, Anatomy of the 1541 provides a full commented disassembly of the ROMs used in the 1541 disk drive when it was written, along with several introductory chapters which attempt to teach all about using the drive, from formatting a diskette to direct-access disk commands, along with the structure of the BAM and directory. There are also some useful programs in the back of the book and brief coverage of some programs on the Test/Demo diskette.

At first, Anatomy seemed perfect to recommend to beginners instead of the admittedly-awful former version of the official 1541 Users Guide packed with the 1541. But as I tried to use it as a reference in resurrecting that oft-lamented book for the new second edition, I found far less usable information than I'd expected, less for example than in Raeto West's and my own books for the PET/CBM, and far less than in Dick Immer's Inside Commodore DOS. As each new topic arose, the authors simply seemed to try things and jot down their observations, rather than giving comprehensive coverage based on all available information. They also, amazingly, omitted any coverage of low memory in the disk, the 2K of RAM that does much of the actual work. So far as it goes, Anatomy is an interesting book, and seems accurate, except for failing to notice that at least one of the programs they describe on the Test/Demo diskette can't be used successfully on most 1541s. The only people who are likely to benefit fully from Anatomy of the 1541 are machine language programmers who need a commented disassembly of the 1541 ROMs. -JS

ASSEMBLY LANGUAGE PROGRAMMING WITH THE COMMODORE 64, by Marvin De Jong, for the **64.**
Paperback from Brady Books (Prentice Hall), Bowie MD 20715. 1984. 296p.

After you finish Jim Butterfield's book on machine language (see separate review), you may want to continue your learning with Marvin De Jong's latest machine language text. Whereas Butterfield's primary focus is things you can do with an extended machine language monitor, such as his **Supermon**, De Jong's book assumes you are ready to move up to the added power and convenience of using an assembler. This very detailed book covers all the bases except for detailed memory maps. Those interested in the last word on how various instructions work will find it here, complete with full examples (available on diskette for $25 extra). Even the often-ignored intricacies of hardware interfacing and timing are covered.

My primary complaint about the book, and one that will prevent me from using it as a textbook is that it teaches an assembler which uses non-standard notation--Don French's **French Silk** assembler. Although the **French Silk** assembler is quite usable, it costs as much or more than more powerful standard assemblers. Recommended for users of the **French Silk** assembler who want an alternative to the book packed with the assembler, and for already-skilled users of other assemblers. -JS

COMMODORE REFERENCE DIARY, by Jim Butterfield, for **all Commodore computers.**
$7 calendar for 1985, from Copp Clark Pitman, 495 Wellington St. W., Toronto, ONT M5V 1E9 CANADA (416/593-9911).

I'd been wondering whether to re-order my Day-Timer calendar for 1985, but now that I have a genuine Butterfield calendar, I won't need another. It's been fun to joke with Jim about what should be included--extra Christmases, Jack Tramiel's birthday, the possibilities are endless. Unfortunately, the calendar itself ended up just like any other, with only major U.S. and Canadian holidays mentioned (Easter Monday made it, but not Easter itself for some reason), and only half-sections for Saturdays and Sundays.

The reference section in the back quarter includes a good bit of useful information of the sort first published in the "Brown Bible" issue of the Transactor. The information covers all models, including the first useful information I've seen on the Plus/4, but owners of each machine will wish there were more specifically for their needs. Apart from two simple typo's, the only fault I found was that the Midnite was **not** listed among Commodore magazines, while the long-departed Commander **was.** What are you telling us, Jim?

As a calendar, it's one among many--lacking only Jim's humor to make it exceptional. As a reference you can carry, the Commodore Reference Diary is unique and useful. Recommended to Butterfield groupies everywhere. -JS

COMMODORE 64 DATA FILES: A Basic Tutorial, by David Miller, for the **64.**
$15 book from Reston Publishing, 11480 Sunset Hills Rd., Reston VA 22090. 1984.

Another of Reston's excellent series of books for Commodore users. Miller provides a clear and complete introduction to data file creation and use, in a format that's friendly to disk and tape users alike. The first three chapters are a general introduction to files. The next five chapters guide you through the development of a sophisticated sequential address file system complete with well-documented program listings (including a checksum program to detect typing errors). Remaining chapters deal with random access (relative) files, give programs for medical records and a home inventory, and discuss steps involved in planning filing programs.

My evaluation based on only 3 days' inspection is very positive. Each chapter ends with a self-quiz to test your understanding of terms and concepts, plus complete listings of all programs presented in the chapter -- which seem miraculously error-free. I think I'm pretty adept with files, yet I've learned lots from the book. It rates my highest recommendation. -Andy Skelton (in Eight Squared)

COMPUTER COMPANION FOR THE VIC-20, by Robert Haviland, for the **VIC.**
$10 spiralbound from Tab Books, Box 40, Blue Ridge Summit PA 17214. 1983. 119p.

This is the first reference guide I've seen for the VIC that truly can be left next to the VIC and used instantly whenever you forget the details of a particular Basic keyword. Its pages are very heavy and durable, and will stand a lot of abuse. The content is also admirable, including for each Basic word: its name, token (ASCII code), abbreviation, type, syntax, conditions of use, and sometimes an example. Appendices cover reserved variables, operators, a fairly-complete code chart, a minimal memory map, color and sound charts, and 3 handy charts related to machine language.

At first, I thought all the examples were wrong, because they use the form: ABS(-3.2) = ABS(3.2) = 3.2. Don't try typing such lines in--they won't work. Evidently the author is showing a step-by-step progression from the original expression to its numeric solution. I wouldn't write it that way, but to each his own. Apart from that, the only weakness in the book was the author's failure to realize ST is a general file status variable, not limited to use with the RS232 port. If you have a VIC, and need a quick reference to its Basic commands, Haviland's Computer Companion an excellent resource. Most of its contents also apply to the 64 as well. Recommended. -JS

COMPUTERS FOR CHURCHES, by Peter & Rainer Luedtke, for **all models.**
$50 3-ring notebook from Harcourt Brace Jovanovich, San Diego CA. 1984. 239p.

This is the first book I've seen on church use of computers that truly covers all the bases. Like Peter Luedtke's earlier book, Your First Business Computer (reviewed in M#18), Computers for Churches is carefully designed, easy to follow, and comprehensive. As the price might indicate, its depth of detail would be overkill for small to medium sized churches, but is entirely appropriate to churches of a thousand or more members. Since such churches often need more powerful hardware than Commodore currently offers, it is not particularly a Commodore book, but neither does it mention any other particular brand. Rather, it gives an overview of the parts, powers and weaknesses of computers in general; details what they can do for a church at several levels; details desirable features in a vertical church software package; supplies a form to use in soliciting bids from vendors; and finishes with a list of vendors and some how to's for implementing a system. Highly recommended for larger churches willing to think carefully about their computing needs before leaping for a solution. -JS

HOW TO PROGRAM YOUR COMMODORE 64, by Carl Shipman, for the **64.**
$10 book from HP (Hayden Press?, 50 Essex St., Rochelle Park NJ 07662).

This HP book is mis-named because it contains so much more about the 64 and peripherals. It is a bargain and a must for new users -- better than any of the others I own or have found so far. -Sarah Knutti

INSIDE COMMODORE DOS, by Dick Immers and Gerald Neufeld, for **4040/1541.**
$20 paperback from Datamost, 20660 Nordhoff St., Chatsworth CA 91311-6152 (818/709-1202). 1984. 508p. Matching diskette $18 postpaid.

This is probably the most important Commodore book that will appear this year, a true landmark! Finally the forbidden regions of the disk drive, the wastelands even Jim Butterfield declined to chart, have been fully documented. Though not intended as a complete disk manual (it describes how sequential and relative files are stored, for example, but not how to create one), it tells the advanced disk user literally everything you ever wanted to know about the 1541 disk drive, including accurate comprehensive descriptions of how to use each of the troublesome direct access commands. Over half the book is taken up by a fully-commented memory map covering all addresses of interest to users, including the vital low memory and I/O addresses. Each location is identified by both its hex address and by its official Commodore label.

The other aspect of this book which will win it widespread notoriety is its full description of how to both make and break many of the disk errors now used to foil illegal copying of commercial programs. Before anyone attacks the authors' morality in releasing such information, remember that commercially-available copying programs already do as much. What is new is that now everyone has access to information once limited to an elite few programmers and pirates. And to assure successful use of the many programs suggested, a diskette of working programs from the book is also available. In preliminary form, it was the hit of this year's LC^4 camp. If you've wondered what comes after relative files, Inside Commodore DOS is for you. Highly recommended. -JS

MACHINE LANGUAGE FOR THE COMMODORE 64 AND OTHER COMMODORE COMPUTERS, by Jim Butterfield, for **all Commodore computers.**
Paperback from Brady Books (Prentice Hall), Bowie MD 20715. 1984. 326p. Matching diskette will be soon available.

If you've been waiting to learn machine language until someone came along who could properly explain it, wait no longer! Butterfield's introduction to machine language is better than anything I've ever seen on the subject, and one of the most important Commodore resources released this year. What makes it so special is his inimitable way of teaching as if by accident, covering everything, and in a few pages, but without the sense of having to work to learn it. This is also the only volume you are likely to read that includes any useful information on using machine language in the B-128. No

matter which Commodore machine you have, if you ever hope to learn machine language, start here. Highly recommended. -JS

MAPPING THE COMMODORE 64, by Sheldon Leemon, for the **64.**
$15 wire-bound book from Compute Books, Box 5406, Greensboro NC 27403. 1984. 268p.

Finally, a 64 memory map that tells you nearly everything you need to know about each memory location to make the machine do its tricks. Map includes: hex and decimal addresses, the official Commodore labels, a brief description of its function, and then full details on its use, hints, bugs, and more. I found it very helpful in teaching an intro to machine language class, and finally put away my official source code, a far less documented piece of work. Leemon's Map is far more useful for people, and especially beginners, than even a well-commented disassembly, such as Abacus' Anatomy of the Commodore 64. Rather than showing you the innards of the 64, it tells how to use them. Map also seems accurate and complete, no small feat. Highly recommended. -JS

MASTERING THE VIC-20, by John Herriott, for the **VIC.**
$10 paperback from Tab Books, Box 40, Blue Ridge Summit PA 17214. 1983. 216p.

Not to be confused with the Spectrum book of the same name and different authors that I have previously recommended. This Tab version is much like many other books on the VIC and 64--a too-quick overview of Basic and lots of small sample programs, all written in a "let me try this and write up what happens" style. It's a style I find unhelpful, especially when trying to refer back to a particular topic. Such books simply don't reflect as much work on the part of the author as highly-organized books. On the other hand, I found little if anything to object to in the facts presented, and appreciated seeing such extras as sorting routines. Like fast food, it's nourishing, cheap, and uninspiring. -JS

Update (see #20): MUSIC AND SOUND FOR THE COMMODORE 64, by Bill Behrendt, for the **64.**
$30 paperback from Spectrum Books (Prentice-Hall), Englewood Cliffs NJ 07632. 1983. 186p.

The new version of this book, complete with diskette just arrived. All the programs on it work, although many need a careful study of the book to discover what they're doing and how to work them. It certainly beats typing in all those programs yourself, but the results still don't match available public domain and commercial music programs. -JS

ONLINE GUIDE FOR THE COMMODORE COMPUTERS, by Mike Cane, for the **VIC** or **64.**
$10 paperback from Signet Books (New American Library), 1633 Broadway, New York NY 10019. 1984. 384p.

Here's something you don't see every day--a $10 book worth mentioning. But if paying so little bothers you, a monthly update is available for an additional $20 (not reviewed). Like Getting On-Line (reviewed in M#19), the On-Line Guide helps the owner of a Commodore computer and modem successfully communicate with the world via computer and telephone. Unlike its cometitor, On-Line Guide is specifically for Commodore users. Perhaps as a result, it skips most of the other book's discussion of the various words related to going on-line, and simply tells you how to set various switches to work most of the time. It also reviews more equipment and program packages directly usable by Commodore owners, giving very candid opinions of each (despite its modest claim that these aren't reviews at all).

The meat of the book is a guided tour through Compuserve, with briefer introductions to some of its competitors, and a sizable section on Punter BB Systems. To a large extent, these discussions amount to printer dumps of what one would see at various places within a given system, augmented by the author's explanations and comments. Personally, I find this approach less helpful than texts that are more carefully organized to present information in order of importance, but this is largely a matter of style. Cane's book will appeal to those who simply want something alongside

as they hop from menu to menu within a remote computer system, but may not appeal to those needing a quick reference to a particular feature.

One other feature that will be of great, but temporary value, is a list of programs currently available for downloading from Compuserve, and brief discussions of actual Punter BBS's called by the author (for some reason he unilaterally dubs them "CPBB"'s). Although many other systems now run on VIC's and 64's, these apparently sprang up after the book was finished. On balance, Cane's On-Line Guide is detailed, as accurate as such a book can be, timely and a good buy. I recommend it to Commodore modem users, and will use it myself, alongside the more organized Getting On Line. -JS

PCDEX: Magazine Resource Guide, for **all Commodore computers.**
$15 paperback from Altacom, Inc., Box 19070, Alexandria VA 22314 (703/683-1442). 1984. 208p.

Very good and appreciated attempt at indexing current computer magazines supporting all Commodore computers. Naturally, we're elated about Midnite's inclusion. They've used interesting subject divisions; most are standard, with just a few I didn't understand (especially in the games area, and the difference in entries under computer instruction & literacy vs. programming). One other anomaly is the title of the book. Who would guess a book beginning with "Pc" would cover Commodore computers instead of IBM computers?!

As for comprehensiveness, I immediately noticed they only indexed half our magazine - just the Reviews. The indexers completely ignored all our extensive Notes and feature Articles, and didn't even include our Table of Contents for the issues 11-15 that were indexed. They also missed issues 9-10 (as did many of you dear readers!). Since Jim has also written for Commodore, Micro, Microcomputing and RUN, I checked his entries. I found them fairly complete and repeated under different subjects in the subject index when they cover more than one topic. This will be a good resource for Commodore owners, and when teamed with Altacom's projected quarterly update (for $18 per year), should make it much easier to find that article you read a few months ago on.... -ES

THE SOUL OF A NEW MACHINE, by Tracy Kidder, for **all computers.**
$4 paperback from Avon Books, 959 - 8th Av., New York NY 10019 (212/262-3361). 1981. 291p.

Have you ever wondered what really goes on behind the locked doors at places like Commodore? How machines like the VIC and 64 really come about? If so, you'll love this book. It's about a different part of the computer industry--minicomputers--but covers a company that has much in common with Commodore, Data General, and how they developed a new model of computer. Reading this book, I felt I was peeking over the shoulders of those building the yet-unannounced machines at Commodore, and developed new sympathy for their problems in converting dream machines into commercial reality. The really neat thing about **Soul** though, is that, in the midst of telling a story, it teaches a great deal about computers. I intend to use it as a supplemental textbook in an "Intro to Computers" course next Spring, and feel sure my students will learn as much from it as from the primary text, and with less pain. Highly recommended. -JS

USING & PROGRAMMING THE COMMODORE 64, by John Herriott, for the **64.**
$9 paperback from Tab Books, Box 40, Blue Ridge Summit PA 17214. 1983. 216p.

Parts of this book are word for word identical with Herriot's VIC book reviewed above. Thus, most of the Mastering the VIC-20 review applies equally to this volume, except that it is intended for a somewhat different buyer. I was impressed by the low price of this book; most others we've reviewed lately bear no resemblance whatsoever to the $2 and $3 paperbacks I used to read a few years ago. Although I found the double column format of this volume a bit unpleasant to read, I appreciated its brevity and ability to cram a topic into a few pages. Both books also end each chapter with a summary, which is of some help. -JS

Accounting and Finance Programs:

PARTS INVENTORY/64, $18 diskette for the **64.**
Inventory program from Fourcom. Unprotected.

This program is designed to store parts information, including part name, number, location, cost, and quantities. It can print to screen or printer, search by part name or number and allows for updating of any field. Information can also be retrieved by giving a minimum quantity value; any parts with a quantity less that value will be displayed. It seems to save and retrieve data quickly from disk files, although I didn't enter much information. As a serious inventory program, it is adequate. Not bad for a small business, but for anything with a lot of use, you would be better off with something more sophisticated. -Steve McNamara

Data Bases and Mail Lists:

Update (see #18): INFOTAPE, for the **64.**
Data manager from Beaver Software Systems, Box 88, Cabin John MD 20818

The features of this cassette-based database manager include calculable fields, sorting, finding and extracting data using logical operators, and 5 different display and print modes. As a former tape user, I only found 2 deficiencies. 1) There were some inaccuracies in the documentation. 2) A condition statement (used as part of the list and print functions to define criteria for finding records) is supposed to appear immediately after the display format is selected and before the column or line spacing is chosen, but in formats 1,3,and 4, it appears after the line spacing request and overwrites it. In general, though, **Infotape** is a serious piece of programming; it is well written and documented, and is recommended to any cassette users wanting a useful database manager. -Ron Dale

Statistical Packages:

SPP: A STATISTICAL PACKAGE FOR PERSONAL COMPUTERS, by P. Royston. $295 (U.S.) diskettes (2) for **64+1541/4040** or $395 (U.S.) diskette for **CBM+8050/8250.**
Statistical package from Kobetek Systems Ltd., 1113 Commercial St., New Minas N.S. CANADA B4N3E6 (902/678-9800).

SPP features include multiple regression, maximum 15 variates, simple descriptive univariates, polynomial regression (max. cubic), with a maximum file size of 5000 cases on a 1541; the 8050/8250 version will hold more--until you fill the disk, using up to 100 variables. As for file handling, it has very impressive file creation, editing and merging capabilities; standard transformation capabilities; limited "row and column" type variable creation capabilities; nice graphics support; but it has no random number generator or file sorting capabilities. The tutorial style manual is readable, but lacks an index and needs more complete explanations of system rules and conditions. In general, the stepwise regression is relatively easy to perform, with maximum two factor ANOVA. It has as good an array of univariate manèuvers as I have seen for Commodore. I like this research tool. -Barry Holley

[EDITOR'S NOTE: The company now reports they also have an SPP Junior version for the 64 with all features, but limited to 20 variables and 250 cases, for $75. If you later upgrade to the full version, the entire $75 will be credited to the purchaser.]

Church Reviews

Update (see #19): CHRISTIAN COMPUTING, $13/year for **all computers.**
Bi-monthly magazine from 72 Valley Hill Rd., Stockbridge Ga 30281 (404/474-0007).
See under Magazine Reviews.

COMPUTERS FOR CHURCHES, by Peter & Rainer Luedtke, for **all computers.**
$50 3-ring notebook from Harcourt Brace Jovanovich, San Diego CA. 1984. 239p.
See under Book Reviews.

SCRAMBLED VERSES, by Bob & Sylvia West, $20 diskette for the **64.**
Bible game for grade 3 and up, from Smoky Mountain Software, 13 Catatoga Path, Brevard NC 28712 (704/885-2516). Requires CBM disk. Unprotected, with user license. Backup diskette available for $8. 90 day media warranty.

In this home or class Bible study package, your task is to recognize the proper order of each line in a multi-line Bible selection, and organize them properly. This gives you an enjoyable way to learn key verses. The supplied texts cover 12 subjects related to Christian living, with 3 selections within each category, each in the New American Standard version of the Scriptures. After each selection is properly sorted, you are rewarded both with points and with a homey hi-res picture and brief hymn.

There are 4 levels to the package, with increasing levels requiring longer selections to be sorted, and eventually 2 and then 3 selections jumbled together. At the top level, the sorting must be done within a user-set time limit. It is also possible to type in your own memory verses (up to 23 lines of 35 characters, with a 16 character title), to personalize the program and relate it to your own current studies. There is also a set of discussion starters for each verse in the printed manual. Although the manual also fully explains each option, the package is usable even without it, thanks to the 3 key control system and on-screen helps.

This is an innovative way of teaching Bible verses, and a well-polished program. I surprised myself at how long I was willing to sit and work at the sample texts. Should be a useful aid to a program of Bible memorization. Recommended. -JS

SORT 'EM 1, by Gaylon West, $20 diskette or cassette for the **64.**
Bible game for age 5 and up, from Smoky Mountain Software, 13 Catatoga Path, Brevard NC 28712 (704/885-2516). Unprotected. 90 day media warranty.

In this game, you view several panels of a cartoon version of some Old Testament stories (the Creation, the Flood, and the birth of Moses), first in proper and then in jumbled order. Your task is to put them back in proper order. At the easy level, this involves sorting 3 pictures. At the advanced level, 6 pictures must be arranged.

At first, your child will need some help, as the controls of the program are only explained in printed text on screen. Later, they'll enjoy working the puzzle unassisted, until the stories are learned. The program auto-runs and disables dangerous keys, making it safe for use by kids, (but also difficult for adults to modify.) To eliminate the initial written instructions, this would be a good program for a synthesized voice, such as the S.A.M. used in Playground Software educational programs (see Education Reviews). Although I could suggest several other minor improvements, none matter very much, and I haven't seen any other Bible programs for this age level worth mentioning. Recommended. -JS

Computer Assisted Instruction:

Update (see #19): ALPHABET CONSTRUCTION SET, by Playground Software. Diskette for **64.** Animated drills for ages 3-8, from Futurehouse, 310 W. Franklin St, Chapel Hill NC 27514. Requires 1541 disk drive, Edumate light pen, and TV or monitor with sound. Unprotected. 30 day free replacement warranty.

Alphabet Construction Set is unique in using the **S.A.M.** software voice synthesizer for non-readers and in using the Edumate light pen to draw the letter on the screen after the child is shown how (by following a drawing cursor). Cartoon drawings maintain interest, and finished letters are checked for completeness and superfluous lines. You can also pre-select the letters to be drawn, and automatically maintain a performance record of which letters have been tried, and how well the child did.

The main flaw in the program is the imprecision of the light pen--getting a nicely rounded line out of the Edumate pen is no trivial matter. Although 8-year old Jamie was quite attracted to the program at first, he found it quite frustrating when he couldn't even make an "I" up to program specs. Perhaps the drawing routine should incorporate an averaging subroutine to help the child draw reasonably straight and connected lines, as in Flexidraw's "8 X 8" drawing mode, or else be more tolerant of "errors." Meanwhile, don't let children try the difficult letters until they've mastered the easier ones.

Another improvement would be a way to replay or shut off explanations once they've been heard. All you can do now is shut off the machine and use different voice options when restarting. In general, this program has an excellent concept; a great deal of time has already been invested in it, but more still remains to be done before children can easily use it. If you are willing to help your child, this can be an excellent learning tool even now. -JS

ANIMAL CRACKERS, by Playground Software. Diskette for the **64.**
Animated drills for ages 3-8, from Futurehouse, 310 W. Franklin St, Chapel Hill NC 27514. Requires 1541 disk drive, Edumate light pen or Koala touch pad, and TV or monitor with sound. Unprotected. 30 day free replacement warranty.

Despite its being mostly a drill, **Animal Crackers** is my favorite Playground Software program reviewed this issue. I couldn't find anything wrong with it and found much to appreciate. Like **Little Red Riding Hood** below, it uses a voice synthesized Frog to give nearly all instructions, and all selections are easily made by light pen. Those selections allow enough slop that the precision of the pen won't be a problem.

The program offers 6 activities that cover most Kindergarten topics, including matching shapes, matching colors, associating a letter with an object whose name includes it, identifying numbers, matching objects to words, and a make a picture option that is like a paint program, except that you don't actually draw the shapes (which are sprites). Any of the activities can be played on any of 8 low res color backgrounds, using 26 alphabetic animals as props. Incorrect answers bring an "Oh oh. Try again" until it's done right--no escape. But nothing here is so hard that a child couldn't do it properly within a few minutes. The combination of a wide variety of activities and locales, with plentiful color, voice, and easy light pen control makes this an outstanding product. Highly recommended for preschoolers interested in reading. -JS

ARITH-MAGIC, by Joanne Benton. Diskette for the **64.**
Math games from Quality Educational Designs, Box 12486, Portland OR 97212 (503/287-8137). Unprotected.

This package of challenging math teaching programs includes 3 parts: Diffy, Tripuz, and Magic Squares. All are especially suited for gifted children, who find ordinary math drills too boring for words. For instance, to make a "diffy", you give the computer 4 numbers, which it puts in a square. Then you go around the square giving the difference between each pair of numbers. Then the computer takes those numbers, and makes a new square. The object is to find numbers that let you keep going as long as possible. (If you succeed, you'll also have had a lot of practice subtracting big numbers!) The only problem in Diffy is that the winner's screen includes both graphic and text mode characters, and isn't look quite right in either mode.

In Tripuz, you are given a choice of working with addition or multiplication. Either way, you are shown a triangle with empty corners, and numbers between the corners that represent the sum or product of the unknown numbers in the corners. Your goal is to identify the missing numbers--welcome to Algebra one! If you miss a guess, a hint is offered, telling you whether a larger or smaller number is needed. Thus, even a student who guesses wildly will learn how to split a difference.

Magic Squares offers you a chance to recognize fairly complex relationships between numbers in a 3 X 3 square matrix. For instance, the sum of the 3 in any direction is triple the middle number, and the difference between the middle numbers of 2 adjacent sides added to the smaller of the two is the value of the opposite corner. Get the picture? Tough, but fun, because you are led through it step by step, with hints on things to notice whenever needed. Highly recommended. -JS

CAVE OF THE WORD WIZARD, diskette for the **64.**
Vocal spelling program for grades 1-12 from Timeworks, Inc., 405 Lake Cook Rd., Deerfield IL 60015. Unprotected.

This is a high res graphics spelling program with synthesized voice. The voice synthesizer requires no additional hardware and is reasonably accurate when using a monitor with audio or a good TV. The program contains 500 words ranging in difficulty from "dog" to "pterodactyl" arranged in 10 lists, with more words in the easier lists. The program allows the player to choose a boy or girl character and one of four levels of difficulty. The character must find 4 crystals hidden in a 10 level cave, jump over rocks, spiders, snakes, etc., and made it back to the top to get out of the cave. During the journey a wizard appears demanding the character spell a "spoken" word. If the correct spelling is typed in, the player is rewarded with more power for the flashlight or more bandages. If the spelling is wrong, then power is taken from the flashlight. The wizard reinforces correct spelling and encourages practice on those missed. The game ends when the player runs out of power for the flashlight, uses up all the bandages, or recovers the 4 crystals and exits the cave. In summary, this is an excellent graphics and sound program for spelling drill. -Kendall Green

CELL DEFENSE, $20 diskette for the **64.**
Cell Biology simulation from HES, 150 N. Hill Dr., Brisbane CA 94005 (800/624-2442). DOS-protected (non-thumping). 6 month replacement warranty.

Cell Defense is about viral infection, and how your body fights it. You control Macrophages that gobble up viruses between cells, Committed T-Cells to blow up infected cells before they become virus factories, Antibodies to protect blood vessels against spreading the infection, and Interferon to stop viruses from reproducing. All must be used together to whip severe infections. The body cells covered include Labile, Stabile, and Perennial cells, plus the blood stream, each with different characteristics. Remember to especially protect cells that can't be replaced, and keep the infection out of the blood at all costs. This usually requires moving between levels of cells in a 3-D matrix. Both weapons and invaders seem randomly placed, but develop in appropriate ways.

The color and graphics in **Cell Defense** are excellent, the sounds appropriate, and the action smooth. Although it takes a while to catch on to the screen windows that show the current level, the current cell, and the body's health, game freaks will find **Cell Defense** as fun as most arcade games, but more challenging because it requires more thinking and less munching. It's a relief to see a decent manual from HES after 2 years. **Cell Defense**'s is colorful, fun to read, and a good simulation of a science notebook. There are also enough on-screen helps that if the manual were lost it wouldn't matter. The only negatives I noticed were that it needs a pause option and a way to switch off the sound. Our whole family highly recommends **Cell Defense.** -JS

CHALLENGE MATH, $50 diskette+backup for the **64.**
Math adventure game for grades 1-8 from Sunburst Communications, 39 Washington Av., Pleasantville NY 10570 (800/431-1934). Unprotected. Lifetime replacement warranty.

Another set of 3 clever programs from Sunburst designed to motivate students to practice addition, subtraction, multiplication and division. In Math Mansion, my favorite, you explore a labyrinth of 13 rooms full of hazards, but to obtain the necessary tool, you must solve problems that require working backwards from an answer to the problem. Since the student selects the route through the house, the game is never the same twice. The graphics are excellent. My junior high panel gave it an A.

In Digitosaurus, a dinosaur grows older and wiser with each correct answer. Students may select both the type of problem and the level of difficulty. One option allows the teacher to input a problem to fit the day's lesson. HURRAY, this option should be in every educational program!

Alien Intruder emphasizes quick recall of basic math facts. Both the speed and the number of problems can be varied and the teacher can input problems. The student must "starve" the intruder of energy by eating the correct answers first. If the student fails repeatedly, the space ship is lost. Though no one is shot in this program, I still dislike it because the sounds and action border on the violent; I feel strongly that violence should not be a part of the curriculum. -Elizabeth Kaspar

COMPUTER CRAYONS, by Playground Software. Diskette for the **64.**
Paint program for "all ages" from Futurehouse, 310 W. Franklin St, Chapel Hill NC 27514. Requires 1541 disk drive, Edumate light pen, and color TV or monitor. Unprotected. 30 day free replacement warranty.

In this program you view outline sketches of objects whose names begin with the various letters of the alphabet. Then you may color them in any of 6 bright colors, using Edumate's light pen (but not Flexidraw's). You may also briefly animate part of each drawing, and sometimes hear a buzz or beep from the speaker. You can also create your own drawings and save them for later reloading. Although the concept is fine and the coloring is enjoyable, a fill command is badly needed. I doubt if most users, no matter what their age, could fill in any of the drawings in the package without error. I usually had unwanted lines going everywhere, something I never worry about with other light pen sketching programs I use. Without that, youngsters might be happier with **Peripheral Vision** (see separate review under Utilities), also from Futurehouse. -JS

Update (see #19): FLIGHT SIMULATOR II, diskette for the **64.**

This is like any other simulator. You have a tendency to over-correct - and you will! Learning the various key functions is no more difficult than learning to use a word processor, but is much different from the actual aircraft controls, even when joysticks are used for aileron, elevator and throttle control. Try user mode 8 at first. That will put lines on the screen to help with aircraft aittitude when getting off the ground. DON'T follow the vertical speed indicator too closely. It is a trend instrument and will promote even more crashes due to over-controlling. If you want a real challenge with direct application to the real world, then I highly recommend **Flight Simulator II.** -Al Kinker (in CCC of Toledo Newsletter)

LITTLE RED RIDING HOOD, by Playground Software. Diskette for the **64.**
Story and learning game for ages 3-8 from Futurehouse, 310 W. Franklin St, Chapel Hill NC 27514. Requires 1541 disk drive, joystick or Edumate light pen, and TV or monitor with sound. Unprotected. 30 day free replacement warranty.

In this most unusual "bedtime story," typed words are almost irrelevant. Using S.A.M. voice synthesis, a large green frog and purple "fly guy" tell the story of Little Red Riding Hood, with the usual antiseptic twists required by squeamish moderns. Along the way your young Hood must help fill the food basket and guide Red through the forest, both of which involve no more than zapping the fly with the light pen when asked. A separate spelling game gives more challenge, making you pick out particular letters or words from a jumbled block of them.

The frog sounds like an immigrant grampa from very far away (like Mars), but he and his story are enjoyable. Although words appear often, they are rarely essential, merely echoing his words, and thus helping the child associate written and spoken words. The story is illustrated by colorful but low res graphics and an occasional simple tune or beep. Jamie, entering the third grade, very much approves of this game, but feels a bit old for it. Recommended for pre-school through second grade, he suggests. I would agree; the story is quite enjoyable, teaches most any child to listen and follow simple directions, and makes good use of voice synthesis and some use of a light pen. -JS

M-SS-NG L-NKS, by C. Chomsky and J. Schwartz. Diskette+backup for the **64.**
Reading comprehension program for 1-2 players, grade 3+, from Sunburst Communications, 39 Washington Av., Pleasantville NY 10570 (800/431-1934).

The goal of this language puzzle or game is to improve reading comprehension and spelling, extend your vocabulary, and study use of words through context, inference and author styles. To do this, you guess the author and title in each of a series of one-page passages that contain missing letters or words. You fill in the blanks in the passages using several techniques. You can read by association, guessing letters and words by their context. With practice, you can guess letter patterns and what part of speech the next word should be; for instance, each word has to contain a vowel, usually the second or third letter, and each sentence normally contains a verb, usually following a noun. After filling in a few sentences, you might even be able to recognize the author's style, especially when full words are missing.

The passages come from 3 different lists: children's classics, encyclopedia (non-fiction and informational), and adult classics. The 3 lists are based on the magic number "9": each list contains 9 passages in each of 9 books, with 9 levels of increasing difficulty (more missing letters and/or words). Although the program moves slowly and contains no help prompts, you can skip the initial directions if you want, stop in the middle of a passage, and even check your score any time (your score is the number of right and wrong guesses on each page and an overall score).

The package can serve a wide range of abilities--not only the number of letters or words omitted, but also the selections used (from children's classics like Little House on the Prairie to adult classics like For Whom the Bell Tolls). The program could best be used by individual students or in small groups to discover and identify the important classics. It's great for reading in context and for remedial reading (i.e., Junior High students can review children's stories). -ES

THE POND, $50 diskette+backup for the **64.**
Pattern recognition game for 1-2 players, grade 2+ from Sunburst Communications, 39 Washington Av., Pleasantville NY 10570 (800/431-1934). Unprotected. Lifetime replacement warranty.

The Pond is an excellent educational program that teaches you to see patterns and describe them logically. The setting is a pond partially covered with lily pads in some pattern. You control a programmable frog who needs to cross the pond by hopping from pad to pad, changing direction when necessary. Your job is to recognize the pattern in the lily pads and program the frog to follow it. At the lowest level, this is easy to

do. The patterns are only 2 steps long, and can be seen in full from the start. Just tell the frog (via the keyboard) to go up 2 and over 3, for example. At higher levels, the task becomes more difficult. First, extraneous lily pads are added to camouflage the pattern, which can increase to up to four steps. Although pattern recognition has been one of my strongest skills, I barely succeeded at the top level, and then only by mapping the part of the pond I could see, and calculating carefully which patterns remained possible as each new piece came into view.

Although you can normally see only about a quarter of the pond at one time, you can request to see the whole pond and even the pattern, for a heavy point penalty. Most of the time you have to manually hop your frog along the pads until you can recognize the pattern. Since you only get 33 hops to solve 3 problems, and can carry spare hops with you into the next level, there is a strong incentive to think rather than hop. If you miss the pattern, your frog will end up in the water and start over. If you succeed, a sonic celebration congratulates you as you move on to the next of 8 levels, ultimately reaching the frog's favorite toadstool. If you don't arrive the first day, you may also restart at any level on future days.

The Pond comes with full written and on-screen instructions, and a warranty that even replaces lost instructions). Color, graphics and sprites are well used throughout, and the sounds are pleasant for home use, but cannot be turned off by the teacher as on the Apple version (the only negative I found in this program.) Overall, **The Pond** is excellent, ideally suited for both gifted education and regular classes. Since it is enjoyable for adults as well as children, I highly recommend it to one and all. -JS

READING FOUR, $35 diskette for the **64.**
Reading drills for 1 student, grade 4+, from Micro-Ed, Box 444005, Eden Prairie MN 55344 (800/MICRO-ED). Compiled Basic. DOS-protected. No stated warranty, but requests you call the company in case of trouble.

Reading Four is a collection of 4 programs intended to help teach reading skills needed in the middle elementary grades. In the first program, the goal is to quickly read and correctly type short phrases, seen for a student-selected period ranging from 1-9 seconds. The second program has the student identify which of various sentences shown on the screen are complete. Catch the rhyming fish has the student select which of 3 words rhymes with a target word. The last program teaches principles of sorting, helping the student to understand how fiction books are arranged on library shelves. Sound is available but optional in each program, all of which are loaded from and return to a common menu program. Color, low res graphics and a few sprites are used to add interest, but these are still drill programs that will seem like work to most students. Like other Micro-Ed programs we've tested, they are well done. -JS

SOLO FLIGHT, diskette for the **64.**
Flight simulator from Microprose Software, 10616 Beaver Dam Rd., Hunt Valley MD 21030 (301/667-1151). Requires joystick and keyboard.

This program allows you to simulate takeoffs, landings, navigation, instrument flying, emergency procedures, turbulence, and adverse weather conditions. You can choose between simply flying or using the Mail Pilot game, select which state you wish to fly in (Kansas, Washington or Colorado), and select between clear weather or windy conditions. There is also an option to practice landings. The review panel agreed that landing was the most difficult function to learn. They also felt the aircraft control functions were very good.

The bottom half of the screen shows the instrument panel, while the top shows a 3-D view of the aircraft and surrounding scenery, caused by the change in size of objects and the plane's shadow at low altitude. Although you can look to the left, right or behind the plane, the normal view on the screen shows the plane and the landmarks in front, consisting of mountains, outlines of forms, airports and VOR towers. With **Solo Flight** you see the plane bank while the scenery remains fixed.

The Mail Pilot game is a nice challenging touch that keeps a user's interest in

practicing all phases of flying. It will assign you cities to deliver mail, and you are scored according to landing points, difficulty level, state map chosen, elapsed time, and mail delivered. The high score may be saved on disk. As you deliver more mail, weather conditions worsen, and you might even encounter an emergency condition. Whenever you land at an airport or crash, you are shown a map of the route you flew.

The program structure and documentation make **Solo Flight** easy to use. Only the horizon scenery was not graphic enough. Pilot Al Shipman said it "is ideal for someone who wants to play at flying." Recommended for anyone looking for an easy-to-learn program that still provides a challenge. -Bill Brouillet (in The Hacker Rag)

SPANISH/64, by Scott Williams & T.L. Wahl. $15 diskette for the **64**.
Spanish dictionary from Farthest Fringe, 101 Highway Blvd, N. Pekin IL 61554. Requires CBM disk drive. 1525 printer optional. Unprotected. No stated warranty.

Spanish/64 is a simple database of words and matching definitions. You may seek a definition of a known word, find a word from a known definition, list the database in alphabetical order to screen or printer, take a 20 question quiz on the Spanish words or their definitions, create your own list of words on disk, and load same back into the computer. Since the capacity of the program is only about a thousand words (depending on word lengths) of which only 500 are supplied, the dictionary lookup options are less helpful than a good printed dictionary. The create option is more useful--it allows you to add to or change an existing file and store it on disk. Each word or definition may be up to 255 characters in length, but may not contain commas or colons.

Quizzes give you two tries at a word, showing the correct answer after two failures. You score will appear at the end, even if you want to quit early. The program can be listed and changed, including changing the printer device number and disabling the startup display. Although this is a simple program, and pure drill, it is a professional effort and widely adaptable to other quiz databases. If you are teaching or learning Espanol, **Spanish/64** will let your 64 help at a very modest price. -JS

SUCCESS WITH MATH: ADDITION & SUBTRACTION, $25 diskette for the **64**.
Arithmetic drills for 1 student, grades 1-4, from CBS Software, 41 Madison Av., New York NY 10010 (212/481-6463). Basic. Unprotected. 90 day media warranty.

This is the first of 4 similar math packages tested this time, all drill programs at differing levels. Each is easy to use, works its problems in the proper order, and teaches needed techniques. The reward messages are brief and text only, but don't include any noises that have to be turned off in a classroom situation. Students can vary the complexity of the addition and subtraction problems (up to 9 digit, 9 row addition problems and 5 digit subtraction problems--with or without borrowing). They can quit working at any time, and see a summary of their performance, but the record is not saved to disk or shown to an adult. If a mistake is made, a second try is suggested and the answer to the current step is shown, which the student must type in and continue to solve the problem--a good touch. The on-screen helps are entirely sufficient, but there is also a fine brief manual, whose best part is a list of the consumer's rights under copyright law. Any company willing to admit consumers have rights too, and supply workmanlike programs in listable copyable form at a fair price deserves widespread support. This isn't the only good arithmetic drill program around, but it is certainly meets all my requirements. Recommended. -JS

SUCCESS WITH MATH: MULTIPLICATION & DIVISION, $25 diskette for the **64**.
Arithmetic drills for 1 student, grades 2-8, from CBS Software, 41 Madison Av., New York NY 10010 (212/481-6463). Basic. Unprotected. 90 day media warranty.

Most of the comments about the addition & subtraction package above also apply to this diskette. The student can choose a 1-3 digit multiplier to go with a 3 digit multiplicand, and then solve the problem in proper right to left order, dealing correctly with each digit and carry along the way before the program will allow the next step to be entered. Similarly, division may be be up to a 3 digit divisor, with a

dividend size to match. The cursor moves all around the properly-shown problem, selecting entries in the answer, carry and remainder area in order until the solution is complete. All that is lacking is decimal remainders. Recommended. -JS

SUCCESS WITH MATH: LINEAR EQUATIONS, $25 diskette for the **64.**
Algebra drills for 1 student, grades 7-11, from CBS Software, 41 Madison Av., New York NY 10010 (212/481-6463). Basic. Unprotected. 90 day media warranty.

Given an algebra problem of the form: AX + B = C, this program leads the student to a proper solution, selecting which of 5 rules to apply next in reaching an answer. As in the other CBS programs in this series, students are shown each step along the way, and required to at least type in the correct answer to each step, even when they are unable to finish by themselves. Errors are both noted and explained, a good touch. Procedural and computational errors are noted separately, and shown as totals at the end of each session. This is the only commercial drill program of its type I've tested, and I can't think of any way to improve it. It will help even some college students who have carefully avoided math too long. Recommended. -JS

SUCCESS WITH MATH: QUADRATIC EQUATIONS, $25 diskette for the **64.**
Algebra drills for 1 student, grades 9-12, from CBS Software, 41 Madison Av., New York NY 10010 (212/481-6463). Basic. Unprotected. 90 day media warranty.

This unique program does a good job of teaching a tough concept step-by-step. Each year our bottom level college math courses lose students who simply can't (won't) learn quadratic equations. With this program, they can practice all night and all month if necessary until the ideas begin to sink in. As with the other packages in this series, the problems are broken up into small parts, each of which is solved separately, with one exception. The crucial act of specifying the two terms is not explained; nor is the FOIL method of testing whether the student's suggested terms are correct. If memory and time permits, I'd like to see an enhanced version of this program covering these aspects in detail. However, that's straining at gnats in that no other commercial program I've seen teaches this concept at all, let alone well. Recommended. -JS

TINK'S ADVENTURE, by Angelsoft. Diskette for the **64.**
Edventure for ages 4-8, from Mindscape, 3444 Dundee Rd, Northbrook IL 60062. DOS-protected. 90 day media warranty.

Eight year old Jamie considers **Tink's Adventure** a very good learning game "for those just starting school." It's like a "pick a path" book, in which you choose one of two paths at each of several points. Eventually, you reach places where you are invited to play 5 educational games that teach the keyboard, and alphabetic order one at a time. Two special keys allow you to quickly advance to the next screen or return to the main menu. There is also a boat and helicopter to pilot, complete with help screen. The manual also helps introduce the characters (from a new series of Bantam books) and the options in the adventure. Only one of the characters is "bad," a surrogate adult who is defeated by doing well in a game. -JS

TUK GOES TO TOWN, by Mercer Mayer. Diskette for the **64.**
Edventure for ages 4-8, from Mindscape, 3444 Dundee Rd, Northbrook IL 60062. DOS-protected. 90 day media warranty.

Jamie considers this program virtually the same thing as the other Mindscape program reviewed above, except with different games. Like its brandmate, it includes lots of colorful pictures, pleasant tunes, and low res cartoon characters with which kids can identify. There are 8 ways to travel and 4 places to go, 2 per trip. In town there are 3 stores to visit, each with a game to play. These involve unscrambling pictured words, shape matching, hidden shapes and letters, and a dressing game. The other comments above also apply to this game, except that there's no bad guy this time. Jamie recommends it "for those just starting school." -JS

WIZ TYPE, by Sydney Development. $35 diskette for the **64.**
Typing game from Sierra, Sierra On-Line Bldg., Coarsegold CA 93614 (209/683-6858). DOS-protected. Media warranty.

Despite a recent unfavorable review in Infoworld, this is my new favorite typing practice game. If a game this fun doesn't inspire you to improve your speed, nothing else will either. It barely attempts to teach you the proper finger positions, offering only a chart before each of the 20 levels and a drill option that focuses on the positions you are working on. Once those are learned, **Wiz Type** is highly effective in forcing you, the Wizard, to try just once more to zap the dragon spirit instead of being fried yourself for typing too slowly. The action here is captivating, with the spirit throwing up new words for you, you zapping them by quick typing, and each of your expressions changing to match the progress of the game. If you win often enough, you'll get a sentence to type in a bonus round, for extra points. Then there are word and paragraph typing exercises, with Bung (the court jester) bouncing along to show the pace. The sample texts are quite interesting and varied, or you may supply your own. After a game, you may see a graph of your progress.

Infoworld is correct about the sample sentences needing a second space after periods and a second hyphen in a dash; most programmers don't seem to have learned that yet. However, they are not correct in asserting that the program doesn't allow RETURN to terminate a word or sentence. **Wiz Type** is just the thing for power building, and a perfect reward for students finishing their drills in a typing class. Highly recommended to typists interested in improving speed and accuracy. -JS

Workshops, Camps, Seminars, etc.:

LINCOLN COLLEGE COMMODORE COMPUTER CAMP:

REVIEW #1: What on earth is LC4? The initials stand for Lincoln Colleege Commodore Computer Camp. It also stands for Jim Butterfield, Jim and Ellen Strasma, meeting people from all over the U.S., Canada and England, learning about and having fun with computers. We talked about computers from 7am to midnight (or later). There was so much to learn and talk about, no one wanted to waste a minute doing anything else.

Learning from Jim Butterfield was the highlight of the week, because he is as entertaining as he is informative. As requests were made, the staff immediately responded. One of the most exciting things about camp for me was the opportunity to talk to other women about computers. There were 15 women out of the 65 participants. I now have some new computer-buddies, and we're all looking forward to next year's camp. -Rebecca Boren (in Input/Output)

REVIEW #2: This summer a dream came true when I attended a Commodore computer camp which boasted all the top names at Lincoln College in Lincoln, Illinois. For a cool $350 you had it all. The meals were a lot better than expected and if you went away hungry, it was your own fault. The rooms were regular dormitory rooms, single occupancy, with air conditioning (thank goodness)! However, some rooms were much nicer than others.

The week was packed with activities and classes. Two college credit hours were available. The entire TPUG library was there, along with user group libraries from many east coast groups. Overall, it was a very educational week--it was not a "vacation" if you wanted to get the most for your money. Homework was very common (teachers haven't changed a bit) and extra study was needed to keep up with whiz kids (they show up just to make the adults feel intimidated). I highly recommend a computer camp if well known instructors are brought in. Except for the very HOT and VERY HUMID weather and driving through some of the world's worst areas (Kansas UCKK), it was a super week and well worth the financial outlay. -Bruce Mecham (in Data Loops Mountain Computer Society)

Adventure Games:

SEASTALKER, $40 diskette for the **64.**
Junior adventure from Infocom, 55 Wheeler St., Cambridge MA 02138

This is the first "Junior Adventure" from Infocom and an excellent one for beginners. The "old timers" will find some perplexing problems as well, but don't expect the challenges or sophistication of the **Zork**s or **Planetfall.** With the aid of a faithful (or is he?) assistant, you must use an untested prototype submarine to find your way to the undersea complex, discover a traitor, make some alterations to your sub and finally do battle with a sea monster! No mazes in this one--but it does have some interesting puzzles. It is unique in two ways. First, it is the first Infocom game to include hints. However, even the hints are up to Infocom's excellent standards--it's nearly impossible to tell what the hint means until the game lets you! Second, you input your own name at the beginning of the game to "personalize" it from then on. Great documentation as usual. -Art Kimball

SORCERER, $40 diskette for the **64.**
Magic adventure from Infocom, 55 Wheeler St., Cambridge MA 02138

Sorcerer begins with a nightmare--and ends with a promotion! Belboz has gotten himself lost and it's up to you to brave the perils of an underground kingdom to find him. By the time you have finished this adventure, your Spell Book will be bursting with new spells, and you will be more powerful than ever--ready to face the challenges of the third part of the **Sorcerer** trilogy. Infocom has once again maintained their place as a leader in the adventure genre. This one will provide hours of fun and fascination and leave you impatient for part three! -Art Kimball

SCROLLS OF ABADON, $35 diskette for the **64.**
Arcade adventure for 1-2 players from Access Software, 925 E. 900 S., Salt Lake City UT 84105. Requires spin-door 1541 disk drive & joystick. DOS-protected. 90 day limited war.

Billed as an arcade adventure, **Scrolls of Adadon** is a complex multi-screen variation on **Pac Man,** with touches from **Q*Bert.** Your character drops onto a game board hanging in space, and begins collecting coins lying on the ground. Eventually, baddies join you on the board. When you move on to the next board with similar activities, more baddies appear earlier. You will occasionally find hints, such as a command to allow you to overcome the one-way travel rules. Victory requires finding 4 parts of a magic amulet, and results in being dropped into the next of 4 levels of the game. (Not that I've gotten so far!) This is a sufficiently complex arcade game to occupy you for days. It isn't enough just to go from board to board, for example. Each board has 4 exits, and as in a regular adventure, you must avoid going in circles--aided here by a map visible at the press of a key. Thankfully, you are not allowed to fall off the grid with a faulty move.

My one objection, but a large one, is that its new bumpless DOS protection is so touchy that neither of 2 copies I tested will work on my MSD disk or on the two pop door 1541 disk drives tested, although they did work on two spin door 154ls I tested, because the program is attempting to read an undocumented added track. Since it is unreasonable to expect Commodore to support programs that insist on exceeding the agreed limits of the drive in this way, be sure you can return the program if it fails on your system. Overall, this is more than just a **Pac Man** or **Q*Bert** clone, and a worthy addition to the program library of any arcadian whose equipment will run it. If it weren't hamstrung by protection, I'd recommend it. -JS

Arcade Games:

B.C.'S QUEST FOR TIRES, $35 diskette or $40 cartridge for the **64.**
Rescue game for 1-2 players, from Sierra, Sierra On-Line Building, Coarsegold CA 93614 (209/683-6858). Requires joystick. Diskette DOS-protected.

B.C. is one of my favorite cartoon strips, although I rarely get to read it. All of the characters from the strip are here, in their typical funny roles. Although skilled arcadians have been known to sneer at the ease of playing this game at lower levels, I find it both engrossing and challenging. Perhaps if I paid more attention to the varied chores at hand, and less to the excellent graphics I'd do better. You are Thor, riding on a Stone age unicycle to rescue Sweet Chick from the dinosaur. You may jump or duck, slow down or speed up, in any combination, and use the fire button to enhance other movements. You start with 5 wheels (lives), which I definitely need. Fortunately, there is a pause option for answering the phone. Sneer if you want to, but **Quest For Tires** is still one of my favorites! Highly recommended. -JS

DRELBS, by Kelly Jones. Diskette for the **64.**
Maze game for 1 player, from Synapse Software, 5221 Central Av., Suite 200, Richmond CA 94804. Requires CBM disk drive & joystick. DOS-protected (thumps). 90 day media war.

In this most unusual game, your task is to aim a room full of revolving doors so that they form into squares, while avoiding baddies who spin the doors and chase you. With luck or skill, you may manage to temporarily trap and eliminate a baddie in a square. When you have filled your room with squares, a way into another room will appear. Go there quickly and free as many others of your kind as possible. If successful or if you manage to get to a particular square in the other room while a woman's face appears with the word "help," you reach a bonus screen. Occasionally you'll pick up a heart in the corridors of the main screen, giving you 5 uninterrupted seconds to trap your chaser in a square. Similarly, finding a diamond transports you directly into the other room. One other complication is a beast that looks like an old Electrolux vacuum cleaner tank. It roams the perimeter of the main screen, shooting bullets that ricochet through the doors. Avoid it and them. To complete your 8 level mission, you'll have 5 lives, and a choice of 3 skill levels. You'll also welcome the pause button, and good introductory music (beeps later). The graphics aren't beautiful, but they are bright, detailed, and varied. If you are looking for something unusual that requires both speed and thought, you might really enjoy **Drelbs.** -JS

FALCON PATROL, by Steve Lee. $30 diskette for the **64.**
Aerial combat, from Quicksilva, 426 W. Nakoma, San Antonio TX 78216. Needs joystick. DOS-protected. 90 day free replacement warranty.

REVIEW #1: Welcome to the Falklands! As sole survivor of a VTOL jet squadron, you have the honor of protecting your nation's oil installations and refueling bases. Fortunately, you get 3 chances, can carry 100 air-to-air missiles, have a fine radar, and can reload and refuel when needed. Unfortunately, there are lots of enemy planes.... You'll need to refuel often, which is quite difficult. Not only must you land on a dime, there are also these nasty planes trying to bomb you as you sit.

Although this is a single-board game, with only a scrolling landscape to add variety, it can be addictive. There is no point in conserving weapons--I always get shot down before running out. You score much better by filling the air with shots while flying head-on into the opposition's ranks, rather than slowly chasing them down from behind. Winners must save their names for the duration of the day's play. I found that and the long delay for fueling unpleasant. I also couldn't pause the game. Though the graphics were mostly low-res and the sounds simple, everything was colorful, and smoothly done, with good attention to such details as having explosions and fires follow the landing of a bomb. Overall, I found the game refreshingly realistic, and developed more respect for the daily terrors of a combat pilot and the capabilities of the Harrier Jump Jet. -JS

REVIEW #2: You must stop the attacking pits from destroying your oil installations and refueling bases. Good graphics and sound effects. I enjoyed the game, and my 5 year old could play it, but the older boys got bored quickly. Has a radar screen to tell where the pits are and more jets appear as your score gets higher, but the game remains the same. -Nita Rybolt

RAID OVER MOSCOW, diskette for the **64.**
Nuclear war "game" from Access Software, 925 E. 900 S., Salt Lake City UT 84105. For 1 player. Requires 1541 disk drive and joystick. Color display recommended. DOS-protected. 90 day limited warranty.

A worthy successor to the excellent war game **Beachhead,** using some of the same combat skills plus some new ones. Morally, **Raid** is on a par with President Reagan's announcement that he would be bombing Russia in 5 minutes, but at least everyone knows this is a game. Morals aside, **Raid** has 6 screens, each with a different chore. First, you must get your jet out of its hangar, after starting out full throttle in the wrong direction. If you succeed, the next task is to fly sideways through the Russian countryside below treetop level. The next chore (comparable to the final one in **Beachhead**) is to shoot out a missile command center's windows to destroy it. Next, you are a commando dug into a trench in Red Square (never mind how you got there) and must use shoulder-launched rockets to take out the defenses surrounding the Kremlin--comparable to the ship-sinking scene in **Beachhead,** except that you can dodge enemy fire. The final scene is reminiscent of **Breakout** and **Billiards;** you are to bounce explosive disks off the side walls of a reactor room into its maintenance robots and destroy them, catching the ones that miss. If you succeed, the reactor will blow up and set Russian defences back 10 years, not to mention what else a full meltdown can do.

What can I say? As a game, **Raid Over Moscow** is very enjoyable--among the best combat simulations yet written, and unrealistic at enough points to remind us that dealing with the Russians or anyone else is not so simple. It has all the amenities: excellent hi-res graphics, realistic war noises, a practice mode, pause button, demo mode, 3 skill levels. However, I would like it a great deal more if it dealt with an imaginary aggressor in a science fiction setting, rather than encouraging an already rampant cowboy mentality toward our generation's most complex problem. If we <u>really</u> want to solve the "Russian" problem, we need to learn less about shooting (tactics), and more about Chess (strategy) and helping people around the World (ideology). -JS

SENTINEL, by Bryan Brandenburg. Diskette for the **64.**
Startrek-type arcade from Synapse, 5221 Central Av., Richmond CA 94804 (415/527-7751). CBM disk and joystick required. DOS-protected. 90 day media warranty.

Sentinel is a very complex, and mildly disguised Startrek--not the arcade game, but the original computer simulation. It includes bases, both yours and the Klingons (under another name), and 3 levels of alien warships. There is also the matter of steering through warps safely, avoiding space debris along the way. To aid you, there are shields, phasors, and torps (under another name), plus the usual vast array of sensors. The prime difference from the old version is the real time arcade action. As a great fan of the original, I found the required haste disconcerting, but recognize it as more realistic. (Besides, there's always the pause button.) The graphics are excellent, and the lead-in music a classic, but you'll be too busy to enjoy either very much. For Trekkies of varying skills, there are 4 skill levels--the bottom one kept me busy. As for problems, there was just one--the game cheats! After finally learning the game enough to play one perfectly--zapping all the enemy base stars, saucers and cruisers, just as I was wiping out the last couple of bottom level enemy fighters, with tons of shields and power left--the game went berserk, and without reporting any damage, refused to track enemy fighters, to show a base even after its coordinates were reached exactly, and generally showed itself to be a sore loser. Though I love all other **Startreks**, and in other respects consider this one the best of all, knowing I can't win fairly may keep me from playing again. Has anyone else beaten this thing? -JS

Update (see #20): SPACE TAXI, $30 diskette for the **64.**
Arcade game from Microprose (Muse) Software, 347 Charles St., Baltimore MD 21201.

In this fun and challenging arcade/action game, you are a space-age cabbie delivering people to make your living. But it's tough! Instead of wheels, your taxi has four directional jets to propel you through 24 screens of obstacles and mayhem. You must deliver your customers safely to their various destinations. You may tire of the digitized voice calling "HEY TAXI!," but it's all in a day's work. 1-4 players, many options for levels of difficulty and great animation. **Space Taxi** provides for lots of enjoyment at a good price. Recommended. -JO

THE SPY STRIKES BACK, by Robert Hardy & Mark Pelczarski. Diskette for **64.**
Theft game from Penguin Software. Joystick optional.

In this game you are expected to steal everything in sight except the flying faucets, which are chasing you. To avert capture, you become a closet case, ducking into the nearest one. After collecting the available loot, exit either via a door on the same level or via an elevator to a different level. The best part of the game is the music, which is interesting and constantly changing. The game action is also fairly smooth, but the graphics are relatively simple, and limited to variations on one screen. Interesting if you like good music. -JS & Keith Peterson

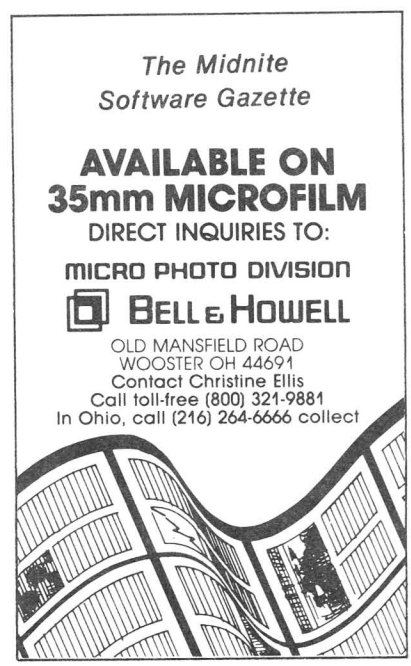
Strategy and Simulation Games:

ARCHON II:THE ADEPT, $40 diskette for the **64.**
Strategy game from Electronic Arts, 2755 Campus Dr., San Mateo CA 94403.

This is the next step of the popular **Archon** game. This one is very complicated and challenging. Having a good working knowledge of **Archon** helps, since some of the creatures are the same. The object here is to defeat your opponent by taking over his castle. It is again a battle of light vs. dark, or Chaos vs. Order. You can play the computer (tough, but if you watch what she does, you can learn some tricks!) or a human opponent. The combination of strategy and arcade-like action really makes this work as well as it did in **Archon.** Plan on spending quite a bit of time to get the hang of this one. Highly recommended. -Marc Rosen

HESGAMES, $40 diskette for the **64.**
Olympic game simulation from 3-2-1 Software. DOS protected.

HESgames is an Olympics-like game, including the 100 meter dash and hurdles, springboard diving, weightlifting, long jump and archery. All are very realistic and playability is good once you get the hang of using the joystick for some of the more delicate moves. If your weightlifter fails to lift a weight, he shakes his head in defeat and the audience will be silent. If he completes the lift, however, he smiles and the audience loudly applauds as the 3 judges' lights turn green to show the successful lift. There are demos for each event except archery and instant replays to see how well (or badly) you did. Really good performances can be saved to disk to show others your expertise at each event. The only negative thing I can say about this game is that a central menu boots each event individually which can take almost a minute. Aside from that, this is a very good game. -Steve McNamara



Update (see #18): M.U.L.E., $40 diskette for the **64.**
Economic simulation gamae from Electronic Arts, 2755 Campus Dr., San Mateo CA 94403.

M.U.L.E. is a fantastic program. It presents some old ideas mixed with a few new twists in a very entertaining manner. The music is about the best I've heard in any 64 game, and the graphics are excellent. As for its "playability," it is Rhianon's favorite game (she is 6 years old) and I enjoy playing it with her. I anticipate more than just a few future games will imitate some of the methods used by **M.U.L.E.** to present ideas and choices. -Len Lindsay

SLAMBALL, $30 diskette for the **64.**
Pinball simulation fo 1-2 players from Synapse, 5221 Central Av., No. 200, Richmond CA 94804 (415/527-7751). DOS-protected. 90 day media warrnty. Requires joystick.

Slamball is a surprisingly good pinball game. Unlike **Night Mission Pinball** and **Pinball Construction Set**, it doesn't allow you to set up the game your own way. But the game it does play seems better to me than anything I've been able to coax out of its competitors. The key is its 4 related screens, showing the progress of the ball through an exceedingly complex pinball machine, but without shrinking the scene to fit a TV. Even the transitions from screen to screen are via smooth-scrolling that doesn't interfere with the play action at all. Color, graphics, and sound are present, but muted enough to play a long time without pain. There is also a choice of a 3 or 5 ball game, and a pause key for the inevitable phone call. Best of all, when 2 play at once, they play together as a team, one controlling the flippers and the other controlling "tilt." Highly recommended. -JS

THE WORLD'S GREATEST BASEBALL GAME, $35 diskette for the **64.**
Baseball simulation for 1-2 people from Epyx, Box 4247, Mountain View CA 94040. DOS protected. Joystick optional.

After reading Epyx's ads pushing this new game, I had to buy it! The games comes with two different versions, one arcade where you manage and play and one where you just manage a strategy game. The color and graphics are good, but the way the players are controlled seems awkward. Punching the fire button once and then hitting the joystick once for infielders and twice for outfielders makes the game very hard to play. The strategy game is okay, but I favor **Computer Baseball** from SSI. My "just have to have" feeling subsided after 1-2 hours of play; then I loaded up my favorite **Starleague Baseball.** Although **Starleague** is far from perfect, in my book its the best. Leave Epyx's **World's Greatest Baseball** on the shelf! -Mike Stout

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Hardware Reviews

Computers:

PLUS/4, $300 microcomputer for **1541/4040 serial bus disk drives.**
64K serial bus computer+software ROM from Commodore, 1200 Wilson Dr., West Chester 19380

REVIEW #1: For the past month, I have been using a **Plus/4** in my home. I haven't had much time for it, what with revising the 1541 manual and writing the Midnite, but I have used it enough to form an impression. First, it is what Jim Butterfield claims -- a good machine for the person who wants to program personal application programs in Basic at minimum cost. Overall, it is more powerful than a 64 -- much more powerful when programming, and a bit more powerful in daily use. Thanks to the included "3 Plus 1" ROM (not tested), it could also be a popular machine with those who want a desktop **Tandy 100** -- good enough to be useful, and simple enough for anyone to use. However, it won't replace the 64 -- probably won't even approach it in sales and software. Still, it's the shape of things to come. Its features will probably be in the expected new 1985 model 64. The extended editing, the added commands, the compact design, and the improved RS232 will all be appreciated, and the 30% faster operation in string-handling programs will be more than appreciated.

It is the kind of machine Consumer Reports would approve for its ease of use, but probably won't recommend over such costly competitors as the **IBM PCjr, Apple][c,** and **Kaypro II.** If you already have a 64, keep it. But if you don't, or if you want a second computer, and money is a factor, check out the **Plus/4.** If your needs are serious, but beneath the cost of a PC clone, the **Plus/4** might be just the ticket for now, and a dynamite replacement for the **VIC.** I certainly enjoy mine and expect to use it for serious word processing once the **Superscript II** I saw in Canada is available. -JS

REVIEW #2: I disagree with Jim Butterfield on the **Plus 4.** If you're bringing out a new computer with roughly similar memory and inferior graphic and sound capabilities that costs more, most people would buy the superior, less costly machine. His argument that people will buy the **Plus 4** to learn Basic is utterly ridiculous. Most people I know who own a Commodore 64 don't need or want to learn Basic as long as they can buy appropriate software. Basic 3.5 of the **Plus 4** is nice, but hardly justifies a new, incompatible machine. I'm not sure people will rush to trade up to a **Plus 4** from the 64, not do I see the Plus 4 as a first time computer, because of its initial cost. Small business will refuse to even consider the **Plus 4,** because of Commodore's past track record and that they don't want to deal with the likes of K-Mart when something goes wrong. -Mark Niggemann

Disk Drives and Accessories:

Update (see #18): DISK O MATE, by Ralph Goff. $50 module for the **4040.**
$50 4040 upgrade from Optimized Data Systems, Box 595, Placentia CA 92670. 714/996-3201. Requires 4040 disk drive. No stated warranty.

Disk O Mate is a 2-part hardware module that plugs into a 4040 disk drive, and adds a power-on light, a beeper that sounds when a DOS error occurs, and write-protect switches to protect diskettes from being altered even when they lack write protect tabs. Except for the write protect switches, this unit is similar in function to the $30 **2040 Error Light** reviewed on p.145 of the Whole PET Catalog. Both are fairly simple to install--no soldering, but neither is trivial either; I had to position the **Disk O Mate**'s remote cable by guess, and fabricate a ground wire for the **2040 Error Light.**

In use, the **Disk O Mate** is an extra box, while the 2040 Error Light is hidden

inside the disk cabinet. In return, the write protect switches and lights are handy, because you can position the box so they can be easily seen. The **Disk O Mate** error beeper is quite loud, and doesn't shut itself off (neither does the **2040 error light**, but it's softer). If the noise bothers you, a jumper can be unsoldered to disable it.

The unique feature of the **Disk O Mate** is the write protect switches, which do work, and may save you a lot of write protect tabs. Hardware types can achieve the same effect by tapping into the wires going to the write protect switches with added switches, and even add a dubious "write regardless" feature best left to software houses creating diskettes without write-protect notches. But if you aren't good with hardware, the **Disk O Mate** is the only way you'll get switchable write protection.

The **Disk O Mate** is a well-finished product that does what it claims. It is a useful addition to a 4040 disk drive. I'd like it better if its beeper shut off after a second or so, like a public domain version I've seen, but that's a matter of personal preference. -JS

DISK-O-TIER, $9.50 each, or $44/dozen plastic stand for **5-1/4" diskettes.**
Diskette holder from ETS Center, Box 651, Willoughby OH 44094 (216/946-8479).

From the side, a disk-o-tier looks like a bird in flight, but this black plastic holder is strictly for earth-bound diskettes. Though the flyer shows it holding diskettes individually without envelopes in slots extending up the wings, I can't recommend using it that way. If you use it at all, leave the envelopes on. Its benefit would be for those who use only a few diskettes regularly , and need to see all their labels at once. I can't imagine paying $10 for it, but the group rate might appeal to some. Look at a picture of one before you buy. -JS

QUIET DRIVE, by Jim Buchanan. Spring for the **1541.**
Stop spring from Cardinal Software, 13646 Jefferson Davis Hwy., Woodbridge VA 22191.

The **Quiet Drive** spring replaces the hard Track One stop and eliminated the sound of your 1541 beating itself to death while coping with its basic identity crisis. **Quiet Drive** requires some mechanical skill to install; you must also use **1541 Physical Exam** (see Utility Reviews) to verify correct installation. Much of your time is spent loading **Exam**, which must be reloaded whenever the serial cable is removed fom the 1541 (my 64 resets itself when this happens). Elimination of the KERCHUNKATCHOCKATA racket makes the effort worth the time spend. If the spring behaves as advertised, reducing the need for re-alignment and making the 1541 sound like a real disk drive unit, the $5 cost of the spring is a true value. Installation of **Quiet Drive**, though difficult, should be seriously considered by DOS jockeys, software pirates, and users of crudely protected commercial software. -John Hulsberg (in Eight Squared)

Interfaces:

Update (see #20): BUSCARD II, parallel printer interface for the **64.**
IEEE interface from Batteries Included, 71 McCaul St., Toronto ONT M5T 2X1 CANADA.

Buscard II is a larger cartridge than RTC's **C-64 Link**, but has a parallel printer and cartridge female connection. A binary switch sets the 64 for IEEE, serial or parallel printer, and also for IEEE or serial disk. It also contains Basic 4, Basic 2 and monitor which can be enabled by a SYS command. Its monitor is better than the **Link**'s, because it has a disassembler and simple assembler, too.

Buscard II replaces the kernal ROM from $EC00 to EFFF. It has 2 I/O chips mapped to $DE00 to $DEFF that switch in only for the actual I/O operations. With a wire clipped to the inside of the 64, one can switch the HIMEM control bit from the 6510 I/O port. Without the wire, the RAM from $EC00 to $EFFF is not available and some cartridge software may not operate. The **Buscard II** automatically handles all the programs for which the original **Link** needs different relocator programs. -Zoltan Szepesi

Update (see #10,11,12): C-64 LINK I and II, cartridge for the **64.**
IEEE interface from RTC, 10610 Bayview, Richmond Hill ONT L4C 3N8 CANADA

UPDATE #1: The **Link** is smaller than the **MSD interface** and is immediately enabled without a SYS command when plugged in the cartridge expansion port. It connects IEEE, serial or parallel devices, expands Basic 2 to Basic 4, has a machine language monitor and a modem program. It uses 8K of memory from the 64, part of which can be restored with a relocator program. The first relocator, on tape, gave two choices - relocate Link to $C000 (originally from $8000 to $9FFF9), or restore the 8K memory (NO RAM program) - but many commercial programs did not work with these relocations.

RTC's new relocator program, version 5.4, gave 10 relocation choices: at $C000, NO RAM, flip C64-Link ROMS, **Wordpro 3+/64, Pet Emulator,** and under Basic ROM $B000 using 256 bytes at $7E00, $8E00, $C000 or $CE00--yet many other programs still did not work, including **Easy Script.** I wrote a letter to RTC, and received a free disk of version 5.5, which included a choice for **Easy Script.** Version 5.5 was good for many (but not all) programs on my old 64, but when I have exchanged my old 64 for a new one, the **Link**'s most-used NO RAM relocation did not work on the modified kernal ROM of the new 64. RTC sent me version 5.6 for $13, which does a good NO RAM relocation on the new 64.

RTC now has a compatibility board for the **Link,** which replaces the relocator programs and adds 2 cartridge ports. They also have other new cartridges: the C64-LINK II, which does not use Basic memory and is completely transparent to most commercial software; the RTC **I-Link,** RTC **5-Link** and RTC **P-Link** cartridges respectively connect IEEE, serial (RS-232) and parallel printers to the 64.

The **C64-Link** gave me very good service most of the time, after I found the proper relocation setting. The **Buscard II** costs $40-50 more, but has some advantages. If **C64-Link II** is as good as **Buscard II,** it would be a best buy, being cheaper by $30 than the original **C64-Link.** -Zoltan Szepesi

UPDATE #2: Could you ask if anyone else has had trouble with the **C64-Link**? It's a fine addition to the 64, but at our public school we are having trouble with the SPC command in all the units. All other commands work with no trouble. Company inquiries have only told us it should work. -G. Duane Baun

Update (see #10,11): MSD INTERFACE, cartridge for the **64.**
IEEE interface from MSD, 11105 Shady Trail, Suite 104, Dallas TX 75229.

Before I bought the 64, I had a PET with the 4040 dual disk drive and the 2022 printer. To use these accessories with the 64, I needed an IEEE-488 interface. I found the MSD interface, which worked well on Basic and many other pograms, but did not load some special programs, like **Wordpro 3+/64.** I exchanged the MSD interface for the more pleasing **C-64 Link** from RTC. -Zoltan Szepesi

MW-350 MICROGRAFIX, $130 parallel printer interface for the **VIC** or **64.**
IEEE Interface from Micro-W, 1342B Rt. 23, Butler NJ 07405 (201/838-9027). 90 day limited warranty.

Just when I thought graphic printer interfaces had been refined to perfection, along comes a newcomer better than all that came before. I have to admit, I'm truly impressed with the MW-350 (and that says a lot). Take everything offered by either Tymac's **Connection** (the interface previously sold by Micro-W) or the **Cardco Plus G,** and add the following: a larger 4K print buffer ($20 user-installed option), power from either your printer or the cassette port of your computer--with a safety interlock to prevent getting power from both at once, a full set of totally visible option switches, and the fanciest DIN plug I've ever seen. In other words, first class all the way. Quality costs too; the 350 costs more than its ancestors. Even so, if you can afford the difference in cost, you'll appreciate the MW-350, especially when it instantly and happily swallows almost 2 full pages of text, allowing you to begin working on something else while your printer finishes its work. Highly recommended when you need the best. -JS

Networking Systems:

MICROSHARE NETWORKING SYSTEM, $800+ networking cables for the **PET/CBM.**
4-16 user networking system from Comspec Communications, Inc., 153 Bridgeland Av., Unit 5, Toronto ONT CANADA

The **Microshare networking system**, widely used in schools, allows from 4 to 16 users (expandable in 4 channel increments) to share a common IEEE bus. The Microshare unit (2 units for 12 or 16 channels) consists of a slim steel case and connects to the computers via ribbon cables which plug into the rear of the unit. A PET-IEEE cable plugs into the side to connect the devices. Indicator LEDs on the front (one for each channel) show which user has control of the bus. Switching between channels is done on a queuing basis, with users gaining access to the bus in the order they requested it. As an "anti-crash" feature, the system switches to the next user in the queue when the one currently using the bus remains inactive for a predetermined period of time. Switching time may be varied, or the anti-crash feature disabled, with a DIP switch on the bottom of the unit. Other features include built-in self test on power-up, plug-in expandability, and an extra printer port to drive up to 5 printers. Extensive testing under a variety of situations has proved the system crash-proof. -Chris Zamara

Printers and Accessories:

BMC PRINTER, $340 printer for **all computers.**
Dot matrix printer from BMC America, CA. Centronics parallel interface. 90 day warranty.

This is a great little machine, almost identical physically to Commodore's 1526 and using the same ribbon. However, it is also software compatible with the popular Epson printers. It is able to do high-resolution graphics, subscripts and superscripts, bold face, emphasized text, italics, compressed print, and true underlining. It has been quite reliable--only 3 out of 75 have ever failed. It has the usual 10 inch carriage, is rated at an optimistic 80 CPS, prints in both directions, and includes a rear tractor. The only negative is a long turnaround time on factory repairs. Recommended. -JO

COMMODORE 1520 PRINTER/PLOTTER, discounted to $170, for the **64** or **VIC.**
Color plotter from Commodore, 1200 Wilson Dr., West Chester PA 19380

Although not a full-fledged dot matrix or daisy wheel printer, it will fulfill the need for hardcopies of program listings, disk directories, your mother's recipes, etc. The print quality of the plotter is nice. It will print text in 10, 20, 40 or 80 columns (40 is most common). At 80 columns, the text becomes a bit eye-straining. There is room in the barrel for four pens, thus four colors can be used, and can be switched through software or manual control.

The resolution across the paper is 480 steps, or about .2 millimeters. There are commands in the plotter's ROM to move the pens around, change the pen colors, and draw lines to relative OR absolute points. You can also print text sideways on the paper, select any one of 15 scribe (dotted) lines, and choose between upper or lower case text. This allows some fairly complex and intricate designs to be drawn. High res screen dumps are also possible with the plotter graphic functions.

Some limiting factors are the narrow paper (only 4-1/2" wide), the print speed (about 12-14 cps), and the fact that it does not support the full CBM graphic character set, but displays most shifted or commodore-keyed characters as underlined alphanumeric characters. Overall, the plotter seems to be a good buy for the money. -Michael J. Bass (in The Hacker Rag)

Update (see #18): DIABLO 620 PRINTER

In M #18, the comment was made that no accessory tractor is available. To the contrary, an excellent tractor, **Model T 10** is available from Diablo. I've been using one with my office's 620 for the past year. -Leigh Armistead

DYNAX DX-15, $500 printer for **all computers.**
Letter quality printer from Brother Electronics. Centronics parallel or RS232 interface. 1 year warranty.

This low cost daisy wheel printer uses widely available Diablo ribbon cartridges. It also does underlining, superscripts and subscripts, bold face, and prints bi-directionally at a nominal 12 CPS. Its $250 optional single sheet feeder works well, as does the $250 dual tractor feed and an optional $200 remote keyboard. The **Dynax** is big (it has a 15 inch carriage) and solidly built--it can run all day without trouble. Recommended. -JO

LEGEND 880 PRINTER, $279 printer for **all computers.**
Dot matrix printer from Cal-Abco. Centronics parallel or optional RS232 interface.

REVIEW #1: This new printer allows subscript, superscript, italic, double-strike and underline. The 880 prints at 80 cps in a bi-directional manner and handles sprocket feed and friction feed paper. The print head comes with a rare life-time warranty. For 1525, MPS-801 or 1526 owners, this printer is an excellent step up. I have found the 880 to be compatible with all my software, with excellent print quality, and it does a very good job with graphics. It runs quietly. Words can't express my happiness with the 880. For those looking for a very fine printer at a very reasonable price, the **Legend 880** is the answer. Recommended. -Mike Stout

REVIEW #2: This printer is an Epson clone, recently chosen by Lincoln College for its low cost. Like some other printers, its power supply does not feed 5 volts to pin 18 of the Centronics parallel interface, as it should, but must be supplied from somewhere else inside the machine. -JS

MICROSHARE 64Q PRINT BUFFER, $800 (CDN) print buffer for **PET/CBM.**
64K IEEE print buffer from Comspec Communications, Inc., 153 Bridgeland Av., Unit 5, Toronto ONT CANADA.

The **Microshare Print Buffer** connects up as a normal IEEE device, using a PET-IEEE cable. It is available with either IEEE or Centronics-type parallel output, and has a switch selectable device number. Originally designed as an add-on component to Comspec's microshare networking system, the **64Q** performs equally well with a single computer and printer. Up to 64K of text sent from the computer is stored in the buffer before being forwarded to the printer, freeing the computer almost immediately. A ready light on the front panel goes out when all 64K is full, but memory space becomes available as text is printed. An anomaly of the **64Q** is that it seems to keep control of the printer after sending something to it. This becomes a problem, for example, on the Commodore 8023 printer--it will not respond to its front panel form feed controls after printing from the buffer. However, resetting the buffer will restore the printer to normal operation. The buffer seems to work with most software, but there have been mysterious problems reported when using it with Brad Templeton's **PAL.** Ruggedness is no problem here: the unit's steel case is bulletproof. The **64Q** is the only IEEE printer buffer readily available, so in this respect it has no equals. -Chris Zamara

Other:

CENTRONICS 4-POSITION TRANSFER SWITCH, $153 switch for **all computers.**
Rotary switch from Quill Corporation, 100 S. Schelter Rd., Lincolnshire IL 60069 (312/634-4800). 30 day refund offer.

If you have several computers but only one printer, or several printers and one computer, this switch can help. It is a large rotary switch with one Centronics parallel input connector, enough contacts to handle all of its 36 pins, and four output connectors to which the input connector can be linked, one at a time. Having it saves us from constant plugging and unplugging of cables and interfaces, with the wear that would cause, and allows us to quickly connect any of four interfaces to our printer. The switch seemed overpriced at first, but I wouldn't solder together the maze of wires inside for less myself.

For those with other needs, Quill also sells a $115 version with only 2 output connectors, and both two and four output RS232 transfer switches ($106 and $165 respectively). Unless you have a spare one laying around, don't forget to include an extension cable in your order; you'll need one to get from the transfer switch to the printer. A 5 foot Centronics cable costs $29 from Quill, and a 5 foot RS232 25 pin cable is $22. The only flaw I've found so far is that pin 18 and 36 are not supported by the Quill Centronics cable, so if your interface gets power from the printer, don't count on it getting it through the Quill cable as supplied. -JS

EXTENDER CARD, $35 card for **64, SX-64** or **VIC.**
User port extender from Computer Corner, Lindhurst OH.

This accessory just came in for review. This is a extender card for the user port of your SX-64 or 64 and VIC. It's required on an SX-64 if you want to use an auto modem, and handy to have for the 64 or VIC. Although the price is a little steep, you're paying for super quality materials here. It has a lifetime warranty against manufacturer's defects. Recommended if your situation requires it. -JO

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Hobby Programs:

HOCKEY MANAGER, $20 diskette for the **64**; diskette or cassette for the **VIC.**
Hockey statistics program from Kobetek Systems Ltd., 1113 Commercial St., New Minas, N.S. B4N 3E6 CANADA (902/678-9800). Unprotected. "Unlimited" warranty.

I could not be certain the requested data is complete enough to be useful. However, the program requires almost no instruction. In the individual player statistics section, it simply requests basic scoring data, - number of goals and assists for each player. It then organizes the statistics and offers to send them to the printer. There is no routine to just display data, except during the correction or updating routines. Under the team statistics section, the team's number of goals is requested. Assuming all players' statistics are entered before the team statistics, this quantity should have been computed by the program. **Hockey Manager** is a very easy program to use, because what it does is very simple. It is only of value to hockey coaches and parents of youth league players. -Ron Dale

Home Programs:

SHOPPING MANAGER, $31.50 postpaid diskette for the **64.**
Grocery list program from Serendipity Software, 8438 Lynda Sue Lane W., Jacksonville FL 32217.

The purpose of **Shopping Manager** is to provide a logically arranged working grocery list based on your supermarket layout. On the whole, **S.M.** does a good job of doing just that. Using the **Shopping Manager** is fairly straight forward. The function keys allow the user to notate coupons, sale items and other relevant information. The documentation is clear and easy to follow. The program consists of 2 parts: Market Manager selects and prints a specific list for shopping day, while Market Mapper creates and generates a list of grocery items from which the working list is drawn. Creating your own list is a tedious process, and not really worth the effort, considering the comprehensiveness of a sample list of 1300 items you may use instead.

The Market Mapper portion has a few faults. First, it requires a formatted diskette after the program has begun; if one is not available, the program has to be stopped, a disk formatted, then the program restarted. A disk formatting utility would be helpful. Second, once the number of aisles is typed in, it cannot be changed. Third, the mapper program includes a file update routine; however, once entered, the update routine cannot be exited until all pages are brought in from disk or cassette. A means of exiting the update would be nice.

As for the Market Manager portion, it also has a few lacks. First, as with the update routine in the Market Mapper, once you begin selecting items from the master grocery list, it doesn't appear possible to exit without the disk or tape going through the entire list of aisles-- and in the sample compilation, that consists of 31 aisles! Second, upon completion of the selection process, the program goes directly to the printing step. Even though printing a selected list is the purpose of this program, it would certainly be convenient if one could bail out before printing, if one wished. It would also be nice to have an interrupt key during the print job. In summary, this is a well done program although I wonder if it's worth the bother to go through all this just to get a grocery list. -Ron Dale

Update (see #19): CHRISTIAN COMPUTING, $13/year for **all computers.**
Bimonthly magazine from 72 Valley Hill Rd., Stockbridge Ga 30281 (404/474-0007).

The second issue of Christian Computing is a huge improvement over the first. It includes a discussion of a homebrew Scripture memorization system running on a Sol (remember Processor Technology?); another slice of "a complete guide to church computing systems" (as mistitled as ever, but much improved in content); two stories about school uses of micros; a balanced review of the Omega C.G. "Integrated Church Management System" (it's expensive but handles money well!); a silly review of the IBM PC-XT ("we particularly like the...keyboard", "ideal for any size church", "front runner for school use"); two Christian Education software reviews; and a refutation of the popular idea that "computers are instruments of Satan"; plus the usual departments, and a note from a computer-using missionary in Borneo, whose "computer is broken down." Although this is likely to end up a "slick" magazine, it may contain enough meat to be worth reading, though I found no mention of Commodore in the current issue. Recommended. -JS

Update (see #19): COMAL TODAY, ed. by Len Lindsay.
Monthly newsletter from COMAL Users' Group USA, 5501 Groveland Ter.,Madison WI 53716

This is a combination newsletter, magazine, and propaganda tool. Its first 2 characteristics make it a necessity for a would-be COMAL user. Issue #2 offers diskettes of the first two issues, as well as giving disk directories for the other COMAL diskettes, a very useful feature. The newsletter gives corrections for COMAL programs printed in any publication and for those on diskette.

The newsletter contains a great deal of information, and the feature articles include something for everyone. The organization of this information has improved with issue #2 in that procedures and functions are now lettered separately from notes (P#, F#, N#). Letters and questions from readers are also numbered. These are, however, sprinkled through the newsletter according to where they fit on a page, rather than grouped together for easy reference. I find a homemade index is already a necessity.

In my opinion, there is far too much repetition of "news" items. What I object to most is the space devoted to anonymous reader letters praising COMAL and to propaganda in general; initials and state are not very enlightening. My second objection is that all the arguments against learning BASIC first are not reflected in the informative text, which seems to assume a previous fluency in BASIC. One clarification needs to be made: line numbers may be "irrelevant," but they are necessary, because the lines must be in the right order. Issue #2 contains very brief reviews of the 5 major COMAL publications, which were helpful in deciding what COMAL books to order. (The Handbook is not what I should have started with, because it assumes fluency in BASIC.) In sum, like any new publication, this one has bugs, but it is still a good and necessary resource for COMAL users who are not experts. -Macy Blackburn McKee

Update (see WPC): COMPUTE!, for all **6502 computers.**
Monthly magazine from Compute! Publications, Box 5406, Greensboro NC 27403.

Compute!, my former best buy, is slipping: too many not very good games, and while the self-checking programs may seem nice, they keep you from learning what you are doing. If the listing consists of nothing but data statements, you learn nothing. If the program runs perfectly the first time and you don' t have to spend several hours de-bugging it, you learn nothing. If you don't want to learn how to program, them buy your programs; there are much better ones to be had than Compute! provides. -Jerry Carter (in CCC of Toledo Newsletter)

COMMTERM-64, $40 diskette or cassette for the **64.**
Terminal system from J & G Software

The **Commterm System** is one of the few cassette-based terminal programs that offers more than a simple way to get on-line; it comes with features such as a large capture buffer for saving data from the screen, easy buffer management, saving of data files to tape, review and printing of the memory buffer, auto-dial and answer, adjustable terminal defaults, an editing feature for uploading data to another computer system, and a file reader. For a $10 upgrade, I received a disk that added downloading and image file conversion, disk saves, and the option to change the screen and border colors. The instructions are, at best, sketchy and confusing. Although the program will auto-dial, it will not repeat the procedure until it gets a carrier (**Smart 64 Term +2** does this very well); however, unlike **Smart 64 Term**, it WILL auto-answer repeatedly!

The outstanding feature of **Commterm-64** is the ease of operation. It does not require a special user diskette, data can be filed away on any formatted diskette, the screens are a snap to learn, and there are no complicated procedures and no diskettes to swap. I have also received quite a bit of company support. While it might not serve some advanced users, it is a good program, a good software value, and a good way to start. -Susie Hurd (in Data Loops [Mountain Computer Society, Sandy UT])

Update (see #14,18): NEWSNET

After going six months without EMAIL, after never ever having CONTROL-P or BREAK work properly, and after my third letter was ignored as completely as the first two, I decided **Newsnet** is headed the wrong way, and quickly. Though it's nice to have an up-to-date, automatic on-line database, it's also nice to be able to stop a 2 hour printout sometime before the end, to send a note to the publisher as promised, and to get a human response when such problems are reported. If this is the best mainframes have to offer, they've got a lot to learn from micro's. No longer recommended. -JS

Update (see #19): VIP TERMINAL, by Dan Nelson & Brian Lundgren, for the **64.**
Icon-driven terminal program from Softlaw, 9072 Lyndale Av. S., Minneapolis MN 5420

I have found **V.I.P. Terminal** to be the one terminal package that does almost everything one could need. Here are some features that seem to have been missed in the Midnite #19 review. First, there is a very excellent word processor and editor I am using to write this letter. To find it, press F7, EDIT WORK SPACE, then start writing. You can fill the buffer with text, save it to disk and continue writing. When on-line, you can either upload the text from disk or from the workspace. To make changes in modem parameters or forms of receiving files and such while in TALK mode, you can either press the COMMODORE key and F1, or get the HELP menu by pressing the COMMODORE key and H. The 20 key function (for sending short messages) is great for logons and gotos on each system, especially when combined with the special environment setup options for each of your systems (to load the custom set up for that board before or after calling). Having 20 logon and goto keys with preset parameters can really make this a very exciting an useful program. There are many other features available, such as faster and slower uploading speeds or transmit with prompt. The manual is very concise, if not wordy. You have to do some digging to find all the features, but it's all there. -Mike Shields

Utility Reviews

Disk Aids:

The ancient Greek playwrights wrote of "hammartia", the fatal flaw in otherwise good people. The 3 diskette copying programs, **Canada A/M**, **Di-Sector**, and **Super Clone**, also bear a fatal flaw--they copy the works of others, but not themselves. **Di-Sector** allows 3 copies of itself to be made, but only via a special routine, and **Canada A/M** comes with a spare diskette. The flaw is that other software companies have already studied the escape hatch these programs use to protect themselves, and now use similar methods in their own protection.

Each of these 3 copying utilities can mimic 20, 21, 22, 23, 27, and 29 errors, covering most of last year's tricks used by software houses. A special utility in **Di-Sector** also copies Electronic Arts products, but not other new tricks. My test disks were **WP-64**, **Canada A/M v2**, **Super-Clone**, **Cell Defense**, **Slam Ball**, **Aztec Adventure**, **Scrolls of Abadon** and **Mr. Tester**. These are all DOS-protected programs that cannot be copied by copy programs we've tested before. All 3 copy programs failed to copy any of the test programs successfully, showing inability to deal with such new techniques as half-tracking, added tracks, and errors on top of errors. This makes the copy programs less useful than one might expect, and has inspired new programs from other sources to copy both the copiers and the difficult programs. Since JO reports all these uncopyable programs have been copied, I wonder what was really gained by making the copy programs less powerful than they could have been? -JS

AUTO64DIRECTORY, $30 diskette for the **64**.
Disk aid from George Earl, 1302 S. General McMullen, San Antonio TX 78237. Requires CBM disk. Unprotected. Unspecified warranty.

Auto is a machine language disk aid similar to the old PET **DUM** program. It shows a list of disk commands and the directory of the current diskette; with it you can use any of the commands or run any program with just a keypress or two. Unlike **DUM**, **Auto** remains in memory as other programs run, and can be accessed at any time with the RESTORE key. I found it much easier to learn and somewhat easier to use than the **DOS Wedge**, though not quite as flexible (no pattern-matching), and not quite as unobtrusive. **Auto** uses the top 8K of BASIC RAM and is incompatible with cartridges, while the **Wedge** lives in reserved memory from $CC00 on. The program has both a brief command menu and a full help screen, plus a decent printed manual. I currently use **Auto** to load, test, and then often delete programs from public domain diskettes I receive. It only occasionally conflicts with other programs. It's a helpful tool for newcomers. -JS

Update (see #18): CANADA A/M v2.0, by Fillmore & Brewer. $42 ppd. diskette for **64**.
Backup program from Marshview Software, Box 1212, Sackville NB, E0A 3C0 CANADA. 506/536-0455. Requires 1541 disk drive. DOS protected, includes one spare copy. No stated warranty. Update $10 to owners of version 1.

Canada A/M is still the easiest of the copy utilities to use; similar to, but easier than Commodore's **1541 Backup**. The new version of **A/M** holds 245 or more sectors in memory at a time, and recreates more errors than before. The added capacity means only 3 diskette swaps are needed, and the whole process (including creating errors) takes less time than the other copiers tested, under 20 minutes. A beep has been added when it's time to swap diskettes, which allows you to do other things as it works, and it's now almost impossible to fall out of the program accidentally. Even a brand new owner can use it--there's no manual, but with no choices to make, who needs one? If you want to do nothing but copy a diskette, you'll probably like this program best. -JS

DI-SECTOR V2, by Bruce Hammond & Mike Henry. $40 for the **64.**
Disk utility from Starpoint Software, Star Rt, Gazelle CA 96034 (916/435-2371). Requires one or more 1541 disk drives. Printer optional, but must be off during some operations. DOS-protected, but allows 3 copies and doesn't thump disk. 90 day replacement warranty. $5 upgrade fee.

Di-Sector drew quite a lot of attention at last summer's MARCA computer fair, with their claim to be a "nibble" copier, able to copy almost anything, and without thumping the drive out of alignment. They didn't seem to know about the Midnite then, and may not yet--our review copy came to us as "dealers." But we're glad to review the product.

The first thing I noticed about **Di-Sector** is that unlike competing copy utilities, it allows a reasonable number of backups. The most reliable diskettes are those created on your own drive--a good touch. Next, I noticed its large, easily readable and understandable manual, which covers **Di-Sector**'s many options well. Third, the package is much more than a copier. It includes repair facilities that can re-format a damaged track without having to copy the entire diskette. It also builds in variations of the 3 minute backup, fast format and fast load utilities which have been circulating among user groups recently, along with an error hunter, device number changer, file copier and other utilities. There is even a disk monitor similar to **Supermon**, but with the added ability to get and put disk sectors, and send disk commands.

How well does it copy? Well, it isn't a true bit copier, despite the name of its main copy utility, Bit Back'em. The custom error maker refused to load on my copy, but Bit Back'em did work smoothly, with or without the screen blanked, and took about a half hour to attempt a copy. Blitzkrieg, the variation of 3 minute copy, took about 4 minutes, didn't create any errors on the new diskette, but just reported ones it found in the original. Without a beep to signal diskette swaps, you are forced to stare at a painfully fast-changing display of varying colors as it works. Each of the 2 copiers needed several diskette swaps. Although not quite all it hints at being, **Di-Sector** is a powerful, speedy, easy-to-use copy and recovery program with many useful disk utilities for all users, whether or not you back up commercial programs. -JS

1541 EXPRESS, $90 CDN cartridge for the **1541.**
Disk speed-up ROM from Richvale Telecommunications, 10610 Bayview Av., Richmond Hill ONT CANADA L4C 3N8.

This cartridge speeds up the operation of the 1541. It plugs into the cartridge port and requires two wires connected to the inside of the 64. There is no provision for adding other cartridges to it. When you power up, you are in fast mode. Any disk command will be 2-3 times faster than normal. You can toggle back and forth between slow (normal) and fast mode with the CTRL and function keys when the drive is activated. A nice feature is the ability to load programs with SHIFT/RUN. The cartridge reserves one of the drive buffers, reducing the number of files you can have open. When I tested load times for **The Consultant, Superbase 64, Multiplan, Manager, Paperclip, Wordpro 3+/64, Flight Simulator II, Beach-Head, Zaxxon, One on One, Music Construction Set** and **Musicalc 1**, the cartridge does cut load time (almost in half) and only **Flight Simulator** would not load. Programs that must access the disk during operation are also faster. The printer cable must be disconnected and the **1541 Express** cartridge in slow mode, and then the cable reconnected before any printing can take place. -Art DeKneef

1541 PHYSICAL EXAM, by Buck Buchanon and Stu Mitchell, diskette for the **64.**
$40 from Cardinal Software, 13646 Jefferson Davis Hwy, Woodbridge VA 22191 (703/491-6502). Requires 1541 disk drive, printer optional. Unprotected. Disclaimer of warranty.

REVIEW #1: The neatest thing about this program is what it does--tell you, in just a minute or so, whether or not your 1541 drive is properly aligned. The second neatest thing is that it has the first perfect copy protection scheme I've seen. No thumps and easily copied, but only the specially made original diskette is physically able to give meaningful results. Eat your heart out, pirates!

There are two tests in this package. One measures motor speed in RPM, showing variability as well (if the speed fluctuates much, your drive belt is bad). They suggest the ideal speed is at or just under 310 RPM, rather than the usually-recommended 300 RPM, and mark 310 RPM on a screen chart of your drive's speed. The other test, the alignment check, makes the 1541 attempt to read sectors that are progressively more off-track, until finally it fails. Then it does the same check going off track the opposite direction. This is repeated on 3 important tracks, giving a very clear indication of both the latitude of error acceptable to your drive, and the accuracy of its centering on track. After this, the track 1 stop is checked, to be sure it is properly set (some aren't).

Many things that can go wrong with a 1541 are instantly identified by this simple test, and a skilled user can probably align an inaccurate drive with the help of this program. That is not, however, its purpose, and no directions for doing that are included. One of the intended purposes is to establish a normal pattern for your drive, so that if it ever does go out of alignment, you'll be able to recognize that, and give you a quick easy test of alignment to run any time you wonder about it.

Without a doubt, **1541 Physical Exam** should be in every user group library, and in any home or office where a 1541 is used for serious business purposes that a faulty drive could upset. If you can load and run a game, you can use **1541 Physical Exam** properly. It was a great hit at the MARCA fair last summer, as well as at the LC^4 camp where it was completed, and it deserves every bit of that success. Highly recommended.-JS

REVIEW #2: "Pick of the litter" among utility products [at the MARCA conference] was **1541 Physical Exam.** Buchanan's description and demonstration were so convincing that I bought the show special consisting of the program plus **Quiet Drive** Track One stop spring for $35. **Physical Exam** is a dynamic test of the following disk drive parameters: Head alignment, Read/write accuracy, Record/playback electronics efficiency, Track One stop placement, and Rotational drive speed using a tachometer program. Unique to the **Exam** is the dynamic head alignment test, using sectors of Tracks 1, 16, 35 recorded "off center" to determine alignment. This method has long been used to check head alignment on business minicomputers (e.g., Xerox and DEC), but to my knowledge, this is a first for the 64.

The **Exam** is presented as a 'test package' only, detracting slightly from its value. It offers no instructions for head re-alignment or adjustment of other tested functions. Still, by using the test series and my knowledge of 1541 alignment acquired from the "Hard Knocks School," I was able to align my drive in less than an hour; the trial and error method I've used in the past sometimes took three hours. Moreover, I cured a Track One stop problem that had kept me from loading **Helllcat Ace** -- whose copy protection scheme had whacked my drive out of alignment in the first place!

I strongly recommend every user group buy **1541 Physical Exam.** User group self-support is both practical and desirable with **Exam,** considering the 85 beans Commodore charges for drive replacement. Repair techs can use **Exam's** printed results as service and diagnostic tools. -John Hulsberg (in Eight Squared)

MR. TESTER, $30 diskette for the **64.**
System diagnostic, from Micro-W, 1342B Rt. 23, Butler NJ 07405. DOS-protected, 1 backup available for $5. 90 day media warranty.

Mr. Tester is a single program you load into the 64 to test most aspects of a typical system, including the TV or monitor, RAM, keyboard, 1541 disk, joysticks, 1525 printer, SID sound, and cassette. Each test is a simple menu choice once the program is loaded. And therein lies the rub--if your system is in much trouble, you probably won't be able to load the test program. On the other hand, Mr. Tester is fairly priced and does many useful tests. I especially liked the memory test, joystick test, keyboard test, and monitor tests. Those should be useful even on systems healthy enough to run the package. Less useful was the sound test, which simply makes some. A comprehensive test would have cycled through all the main SID settings and identified them on the way

through. Similarly, the 1541 test is a simple sector read/write test--similar to a working version of the **Check Disk** program on the 1541 Test/Demo diskette. It won't tell you anything about alignment or drive speed or belt condition, just whether the drive is working. **Mr. Tester** would be a very good addition to any personal or user group library, just the thing to have handy when adjusting a TV, or when a system begins to fail. Recommended. -JS

SUPER CLONE, $50 diskette for the **64.**
Disk utility from Micro-W, 1342B Rt. 23, Butler NJ 07405. DOS-protected. 90 day media warranty.

Super Clone is a $10 upgrade to the **Clone Machine** reviewed in Midnite #18. It adds a **Super Clone** option similar to the no-skill-needed options offered by its competitors above. The new option also handles more error types than the older **Unguard** program (still included), and has an error finder that doesn't thump the disk the way **Unguard** does. A convenient menu selects among the various options. However, the new features are separate from the apparently unchanged older options. I'd have prefered seeing the fast bumpless error checker built into **Unguard,** rather than pasted on top of it.

Like **Di-Sector** (and unlike **Canada A/M**), **Super Clone** comes with several other disk utilities, and an improved manual (though still tiny and hard to read). With it, you can edit individual sectors, and copy from one unit to another, or single files on a single drive, even relative files. Perhaps its best feature, compared to the above competitors, is that **Super Clone** has its own newsletter (reviewed in M#18). Overall, **Super Clone** is a definite improvement over the **Clone Machine,** although a bit thrown together. If you already have the **Clone Machine,** getting the **Super Clone** upgrade is a better buy than either of the other backup programs tested. Others may also want it for the program's newsletter. -JS

Graphic Aids:

Update (see #20): PERIPHERAL VISION, $35 diskette for the **64.**
from Futurehouse, Box 3470, Chapel Hill NC 27514. Requires Edumate light pen and CBM disk drive. 1525, 1526 or Epson printer optional. Unprotected. 30 day free replacement warranty.

Peripheral Visions is a powerful paint program, one that makes a huge difference in the value of the inexpensive Edumate light pen. Together, the two allow you to draw in 15 colors, with 6 different brush widths, using 35 standard textures or designing 6 of your own. There is also an intelligent fill command that won't ruin your drawings by filling in too much, block move and duplicate options to copy outines of shapes, easy-to-control geometric shapes, and the essential zoom mode for detail work. For those with limited drawing skills, a mirror mode allows easy kaleidoscope effects. Any character can also be included in drawings, although selecting and placing characters is a slow process, similar to using a Dymo labelmaker. Accuracy and speed may be balanced, although neither matches the accuracy and speed of **Flexidraw** is such chores as writing a signature on the screen. (How about a version that can use the Flexidraw light pen?)

One of the best features is **Peripheral Vision**'s ability to hide its menus, allowing you to draw on the entire surface of the screen. There are also instructions for loading its pictures into other programs, and the ability to save them to disk or printer. The whole package is controlled by icons (pictures), backed up by a brief but comprehensive and readable manual. The only negative is the Edumate pen itself, inexpensive but limited in accuracy. Also, you have to hold one of two keys down the entire time you draw, or else keep the SHIFT LOCK key on. I wish the pen was like Flexidraw's where you push the pen down on the screen to activate it, and understand a revised Edumate pen will work that way. Overall, this is an excellent product at a moderate price, limited only by its medium quality light pen. Recommended. -JS

Programming aids:

THE OPERATING SYSTEM, by William Fossett. $58 postpaid cartridge for **64.** Programmer's aid from Hacker's Hardware, Box 7933, San Diego CA 92107. Customized version $10 extra. Requires 1541 disk drive and joystick. DOS-protected. 10 day money back and 90 day replacement warranty.

The cover letter that accompanied this product is the most interesting I've ever seen--rather than try to interest us in the wonders of the product, it stresses what an opportunity a quick review of such a product offers the Midnite to scoop its competition. The letter is a classic, and its author should do well in this industry.

The product is quite nice, too. Though not a true operating system, this 4K cartridge adds many useful commands to the Basic language and the 64's original operating system. Operating at NMI level, it is available even within many programs--by simply pressing the RESTORE key. In normal use, it swipes 3K of RAM from the top of the BASIC workspace to hold several menu options that make it convenient even for beginners to use. However, that memory can be freed when needed, so long as you are willing to give up the menus and associated commands.

At power up, your screen will now be gray, with black text. If you buy the custom version, the sign-on message will be whatever you specified in placing the order, up to 30 characters in length. One other change will be obvious--the RUN key will now default to the disk, and allow you to specify a filename in place of the usual asterisk (*). The default load will automatically handle machine language programs with unusual starting addresses. Such programs will also have their starting addresses printed following SYS on the screen, allowing you to easily cursor up and start them. Such programs will also leave Basic pointers alone, allowing you to load utilities with a Basic program in memory.

Two of the 4 RESTORE key menus handle all the common diskette housekeeping commands. The other two add extended Basic and I/O commands respectively. The new Basic options range from color-setting to un-new, delete, append, renumber, and a partition command that lets 2 programs share memory at once. The new I/O options range from changing the default disk devices, to a single-file program or sequential file copy and an auto-run maker. The only obvious weakness in the product is that it can't handle drive 1 of a dual disk system. I would also prefer being able to see a directory at the same time as giving a diskette housekeeping command.

As a programmer, I'd be even more excited about an OS ROM that actually plugged into the Kernal socket and happy to settle for only the **DOS wedge**, altered colors and default to disk to get it. But for new users, **The Operating System** is much easier to use than any alternative, and a most helpful addition to your computer. It will ease your life during those first crucial weeks when nothing comes easily. How about giving a customized one to the beginner in your life this Christmas? Recommended. -JS

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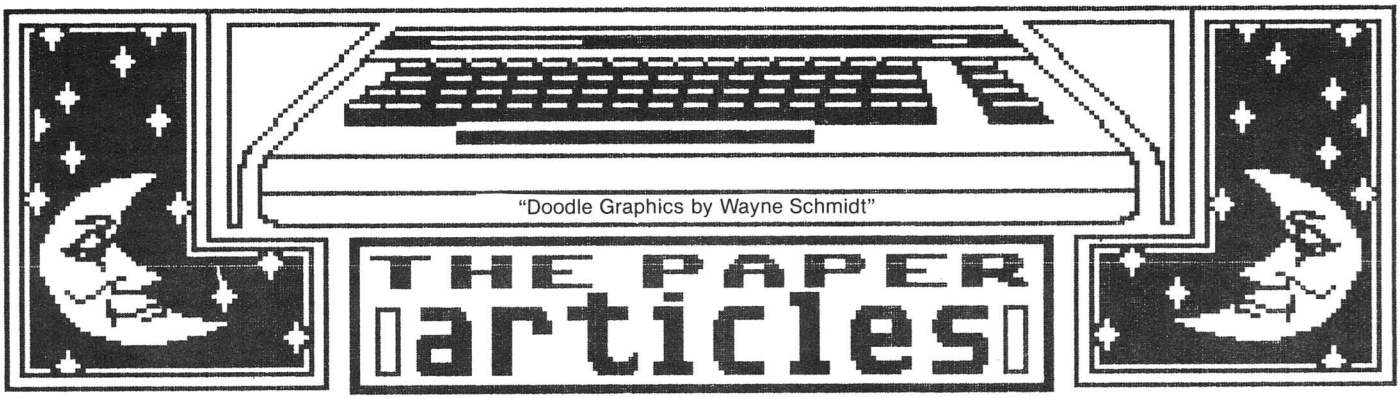


Feature Article:
MIDNITE MUSINGS

HAVING IT BOTH WAYS: Common Sense About Software

by Andy Skelton

I've been playing a game called **Blue Max** in which the object is to become a World War I flying ace by shooting down enemy German planes and bombing enemy targets. In saner moments, I reflect upon the implications of the game and find they disturb me.

Don't get me wrong: I don't believe arcade games are turning America's youth into illiterate, mush-brained fanatics. Yet there is something disturbing about software which rewards one for reflexive, unthinking acts of violence, regardless of their "harmlessness." As a social psychologist, I know a good bit about the effects of TV violence on the behavior and attitudes of viewers. Rather than belabor a long standing controversy involving numerous vested interests, I'll simply summarize by saying that the evidence is overwhelming that dramatic portrayals of violence do not provide a "healthy," second-hand means for purging us of violent impulses (the so-called 'catharsis' idea), but instead do just the opposite. Virtually every study of short term effects of violent media portrayals shows that these actually increase one's propensity toward violent behavior. Even more troubling is the well documented finding that increased exposure to such media violence makes us more tolerant of and less sensitive to violence in society. What has this to do with **Blue Max**?

First, such games replace passive exposure to violence wtih active participation. Wouldn't such participation have more deleterious effects than simple viewing? Second, the violence is sanitized, "cute," and devoid of historical, political or moral context. Wars are tragedies and have causes -- both facts which are ignored in arcade game violence. The worst offender, I think, is **B-1 Nuclear Bomber.** The premise: for no particular reason, the U.S. and Soviet Union are at war; your job is to pilot a bomber to the USSR and incinerate your target with H-bombs. Sorry, but this is disgusting!

Worst is our reluctance to believe that computers can have ill effects - reflecting a lack of our own common sense. We don't care to believe violent games are harmful, despite contrary evidence. Yet we're quite willing to believe an SAT training program will improve our kids' performance on College Board tests, despite the absence of any solid evidence supporting the advertising hype. We'll even believe a computer program can provide valid personality analyses, when psychologists themselves doubt whether psychologists can validly analyze personality! In short, we feel computers can do nothing but good. We want it both ways: "harmless" violence and educational panaceas. It's time we realized it just doesn't work that way. Computers are nothing more or less than the uses to which we put them. If we use them thoughtlessly, then we get what we deserve. Or we can regain our common sense and ask serious questions about software. The choice is ours: we can make it thoughtfully or by default.

Feature Article:
B-128 COMPUTER

ANY B-128 USERS OUT THERE? WANT TO START A USERS GROUP?

by Gary Greenberg

B-128 FEATURES:

Although it seems to be quite a secret, Commodore has released a "B" line computer. There is only one "B" model in the U.S., available from Protecto Enterprises for about $900. It is dubbed the B-128, differs from previously announced versions (no detachable keyboard, integrated disk drives or built-in monitor), and is the cheaper of two versions that made it to market (the other is sold only in Europe). I am using the Gorilla green display monitor which has a 12" screen. The B-128 has 128K memory. The 256K upgrade and CP/M compatibility module are still not available in the U.S. One nice feature is an RS-232 port which can communicate in true or PET ASCII. The keyboard has 10 function keys (plus 10 more with a shift) and a numeric key pad. There are four cursor keys arranged in a row. Several often-used keys require a shift to access, such as " : ? # $.

AVAILABLE SOFTWARE:

There are very few - but very good - software packages out. I use **Superscript II** for wordprocessing and **Superbase** for a data base manager. **Superscript II** comes with a spelling checker and permits formatted output to video from any page (two reasons I upgraded my old system). Two features bug me on the **Superscript II:** the repeating cursor is very slow, and the "cricket-like" background noise coming out of the B-128 while using the program, which can be avoided if you remember to hit ESC H before loading the program, but I always forget. Also being promoted are **Calc Result Advanced** and some accounting packages.

FILE TRANSFER PROBLEMS:

I ran into substantial difficulties when I tried to transfer some **Wordpro 3+** and **Papermate** files into **Superscript II.** First was some incompatibility reading disks on a new disk drive that were created with the old disk drive, using my PET 2001 graphics model (characters displayed in upper case). **The Wordpro** transfer was a disaster. Everything came out lower case and all lower case "m"s were converted into carriage returns. The formatting didn't appear to transfer very well. I had more success with **Papermate** files. Upper case letters transferred correctly, but all formatting commands had to be changed, and the line lengths remained only 40 columns wide, with carriage returns after every 35 characters or so. I wrote a program to merge every three lines into a single line before transferring the file into **Superscript II** to make editing easier. I also had to use "search and replace" to strip out the quote marks at the beginning of each line after the transfer.

I also had difficulty transferring files between **Flexfile** and **Superbase.** Since **Superbase** required a unique key for each record, I had to create a sequential file from **Flexfile** and write a program to add in a unique key for each record. I also had problems reading the ST codes after disk operations when setting up the new file (getting a 2 instead of a 64 at the end of a file).

B-128 USER GROUP COORDINATOR:

I am interested in temporarily coordininating some B-128 information and writing it up for **Midnite** for a couple of issues. If you want to send me something, contact: Gary Greenberg, 355-10M South End Av. NYC 10280.

One piece of software that would interest me would be a program that would let me use the RS-23232 port to transfer text data from a lap computer to the B-128 so that I can manipulate it in **Superscript II.**

Feature Article:
DATA FILES

ALTERNATIVE DATA STRUCTURES
(or, Why hide numbers in a string?)

by William Robbins

A data structure is easier to define by example than to explain: a list (of numbers, for example) is a linear data stucture. Computers (and BASIC) lend themselves best to linear or rectangular data structures (for example, an array). In a rectangular structure, the data is arranged in rows and columns, like this:

Name	Soc. Sec. #	Phone #
Jones	543-45-5767	345-5767
Smith	638-57-7889	465-6778
Reagan	576-69-1948	465-6878

Usually, the rows represent items of data (records), while the columns represent fields (data elements that make up a record.) In this example, every data item (person) has a social security number and a phone number. Even if one record had no phone number, the computer would leave space for it. This is normally all right, because when we create a data structure, we can usually make decisions about what kind of data we will keep in each record.

However, some tasks do not lend themselves to rectangular data structures, and BASIC becomes unwieldy. For example, suppose you were to write a program to index a text file. The data structure is best illustrated by the desired output of the program:

Word	Location(s)		
ahem	3	45	263
alloy	2	17	92
	132	246	
beauty	12	74	
bungle	35		
commerce	19	23	

Here, the word 'ahem' appears 3 times in the text, at lines 3, 45, and 263. The word 'bungle' appears only once, at line 35, while the word 'alloy' appears 5 times. Now, picture the DIM statement for this program: 'DIM T$(X), P%(X,Y)', where X is the number of words in the index, and Y is the number of times a word may appear. P%(1,2) would hold the number 45 (the second occurrence of the first word), while P%(4,1) would hold 35 (first occurrence of the fourth word). Here we arrive at our limitation: what if our text file contained 1000 different words and some words appeared up to 20 times? The string array will use 1000*3 or 3000 bytes (plus string space; assume a total of about 10000 bytes), but the integer array will take 1000*20*2 bytes, or 40000 bytes!

This is totally impractical, because the data structure we are using is not rectangular. To record the location of a word that appears 20 times in our text file, we must provide space for 20 appearances of EVERY word in the file, even though most words will appear only a few times. The second chart (the index) is not a rectangle, while the first chart is.

Does BASIC provide a solution to this dilemma? You bet. The first clue is 'garbage collection', when a BASIC program pauses momentarily for no apparent reason. In fact, the computer is purging unused string space to make room for other data being manipulated. This is necessary because, when you dimension a string array, BASIC doesn't know how much space the array will take until you actually put data in each string. For example, T$(1) might be filled with 'and' (3 bytes), while T$(2) might have 'the charge

of the light brigade' in it (18 bytes). To overcome this problem, BASIC sets up a series of pointers that point the way from the place where the string ARRAY (the list of addresses) sits in memory, to the place (at the top of memory) where the actual string data resides.

On the other hand, a numeric array always has memory reserved for its use at the time the DIM statement is executed, because we know exactly how much memory each number will use, no matter what its value. A numeric array is always a rectangular data structure, but a string array is not. The result is the intermittent pace of BASIC programs that manipulate strings, as BASIC continually adjusts to the changing memory requirements of this non-rectangular data structure.

Since string arrays are not rectangular structures, they can be used to overcome programming problems like the one above. Suppose we were to re-write our indexing program using the following DIM statement:

```
DIM T$(X), P$(X)
```

Now, the list of addresses of each word will be held in a string, rather than a numeric array.

Referring to the index output above, in the first programming solution, each location in the text file where a word appears is represented by an element in an integer array (e.g., P%(1,2)=45). In our new version, each occurrence of the word is recorded in two bytes which are appended onto the string P$(X). Each 2-byte string stores a number from 1 to 32767, as follows:

The first byte is the number divided by 256 (integer division);
The second is the remainder of that division.

For example, the number 341 would be represented as follows:

```
INT(341/256)                = 1
REMAINDER  (341-(1*256))    = 85
```

so, `P$(X) = CHR$(1)+CHR$(85)`

Since each string P$(X) will have twice the number of characters as occurrences of the word in the text file, the maximum number of times any word's location can be recorded is 127.

In our indexing example, since 'ahem' appears at lines 3, 45 and 263, P$(1) would have to hold the values 3, 45 and 263, as follows:

```
P$(1) = CHR$(Ø)+CHR$(3) + CHR$(Ø)+CHR$(45) + CHR$(1)+CHR$(7)
```

In addition to the index example mentioned, this idea is useful in applications such as an audit trail, where each record in a file has an unspecified number of transactions in ANOTHER file attached to it.

This technique does not work in MBASIC under CP/M, because CP/M uses CHR$(26) to denote the end of a sequential file; however, it seems to work without any problems in CBM BASIC.

Feature Article:
SCHEDULING

DUTY ROTA (SCHEDULING) PROGRAM

by Clarice A. Baker

Here is the Glossary of my Duty Rotation Program for the 64, plus a print-out of the program. It produces a 24-hour on-call hospital schedule for the 6 Gynecologist-Obstetricians on the staff of Royal Inland Hospital in Kamloops, B.C. Ironically, one of the first things I was asked to do last summer was to sketch out a program for the Anaesthesiologist's Duty Rota, which incidentally is much easier than my own department's; when I provided their present Chief with a diagram, he seemed to think it made it so easy to understand, we would not have to trouble with the computer!

GLOSSARY OF VARIABLES

INTEGER ARRAYS

Corresponding numerical array, CA%(6,7) is for 6 weeks and 7 days per week.
CA%(6,7) = Dates of the month (Ø in "initial gap," 99 after last date of month)
DN%(5) = "Code numbers" of 6 doctors (in the order of rotation)
WE%(5) = Order in which doctors rotate weekends in target month, depending on who worked last weekend of preceding month
AB%(M1) = Contains "binary equivalents" of doctors' codes when absent on particular dates (to make it easy to code more than one doctor away on a particular date)

STRING VARIABLES AND FLOATING-POINT VARIABLES

YN$ = Used for answers re correctness of input
YR$ = Year
MO$ = Month: LM$ - first 3 letters of month
YR = Year as a variable (to determine leap-year and length of February)
M1 = Number of days in month
I = Local variable, mostly in For-Next loops
AN$ = String used for inputting choices of the various options presented
AN = Value of AN$, after testing for valid input
IG = "Initial gap" in a calendar month (# of days from Monday to first day of month; for example, if the first of the month is a Wednesday, IG = 2)

STRING ARRAYS

DR$(5) = Names of 6 doctors (only 5 take part in the rotation; the sixth is DR(Ø))
DW$(7) = Days of the week
AW$(5) = Doctor's absences, including vacations (for the printer)
DO$(5) = Doctors' names with initials (for the printer)
PH$(5) = Doctors' phone numbers
W,D = Variables that fill the CL$ array (and the
CL$(6,7) = Six-week "calendar" of names of doctors on call on each date (where there are "gaps" in the calendar -- like the initial gap from Monday to first day of month, and unused days of last week after last day of month, CL$(W,D) = [3 spaces])

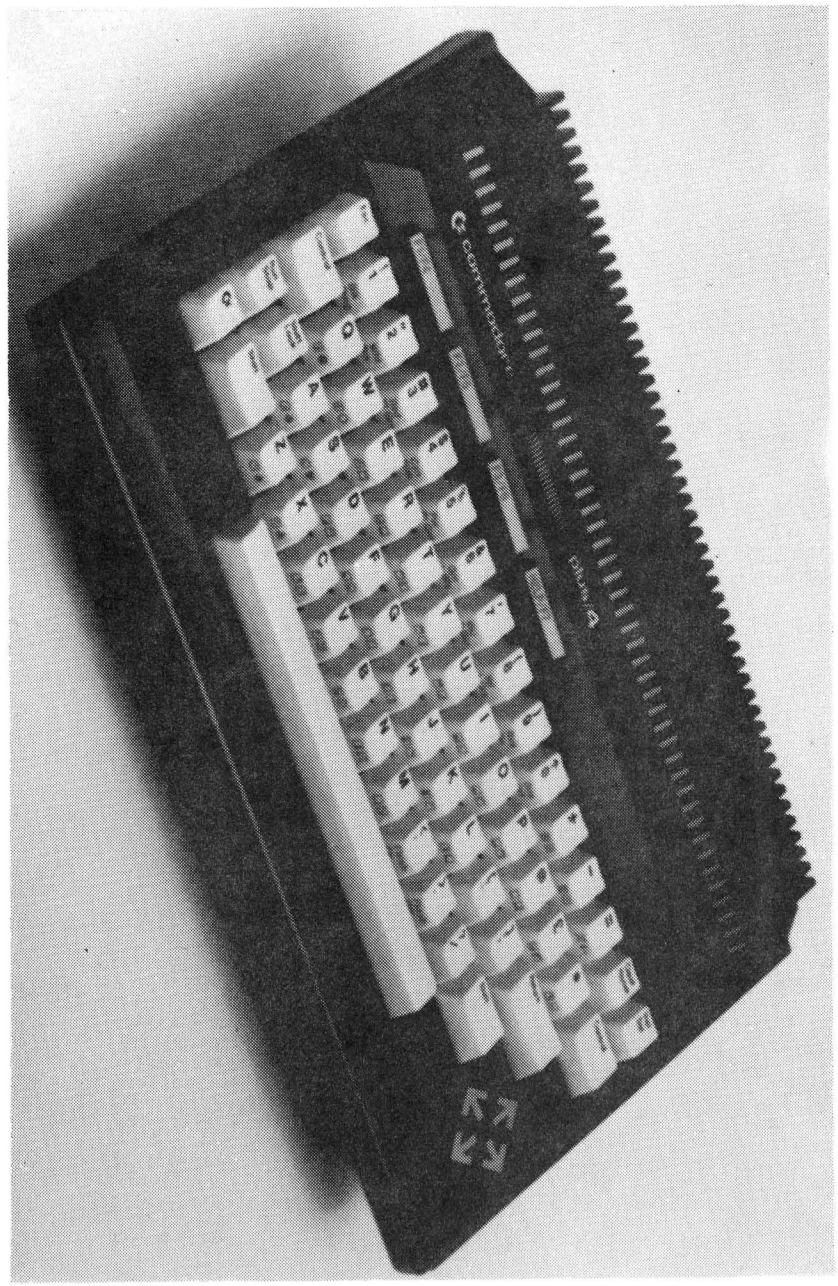
EDITOR'S NOTE: This is an important program because it's the first we've seen that solves the problem of creating a fair rotating schedule for people who must work at unpopular times. It is especially appropriate that it was developed for use in the caring atmosphere of a hospital. Note, for example, the warmth of lines 450 and 510 (presumably never seen by anyone but the programmer).

Now, how about someone making this excellent utility into a general purpose package, suitable for firefighters and police, as well as doctors, and covering such items as vacations, overtime and so on? -JS

```
1 REM DUTY ROTA,COMPUTER-ASSISTED
5 REM ASKS FOR INPUT RE MONTH,YEAR,AND WHO'S AWAY
8 REM ALSO WHO WORKED LAST WEEK OF PRECEDING MONTH
10 REM PUTS COX TO WORK ON DAYS OTHERS ABSENT,UNLESS HE'S ALSO AWAY
15 PRINTCHR$(147);
20 PRINT"LET'S GET THE ROTA DONE"
21 PRINT"TYPE IN YEAR IN FULL E.G. 1984"
22 INPUT"WHAT YEAR";YR$:PRINT
23 INPUT"CORRECT (Y/N)";YN$
24 IFLEFT$(YN$,1)<>"Y"THEN22
25 PRINT"TYPE IN MONTH ■IN FULL◢ E.G. JANUARY"
30 INPUT"WHAT MONTH";MO$:LM$=LEFT$(MO$,3)
35 INPUT"CORRECT (Y/N)";YN$
36 IFLEFT$(YN$,1)<>"Y"THEN30
40 YR=VAL(YR$):IFYR/4=INT(YR/4)ANDLM$="FEB"THENM1=29:GOTO50
42 IFLM$="FEB"THENM1=28:GOTO50
45 IFLM$="APR"ORLM$="JUN"ORLM$="SEP"ORLM$="NOV"THENM1=30:GOTO50
46 IFLM$="JAN"ORLM$="MAR"ORLM$="MAY"ORLM$="JUL"ORLM$="AUG"THEN49
47 IFLM$="OCT"ORLM$="DEC"THEN49
48 PRINT"TRY AGAIN":GOTO30
49 M1=31
50 DIMDR$(5),DN%(5),DW$(7),AB%(M1+2),AW$(5),CA%(6,7),CL$(6,7),WE%(5),DO$(5)
52 DIMPH$(5)
55 FORI=1TO6:FORJ=1TO7:CL$(I,J)="???":NEXTJ,I
60 FORI=1TO7:READD$:DW$(I)=D$:NEXTI
65 FORI=0TO5:READD$:DR$(I)=D$:NEXTI
68 FORI=0TO5:READD$:DO$(I)=D$:NEXTI
69 FORI=0TO5:READD$:PH$(I)=D$:NEXTI
70 FORI=0TO5:DN%(I)=I:NEXTI
75 DATAMONDAY,TUESDAY,WEDNESDAY,THURSDAY,FRIDAY,SATURDAY,SUNDAY
80 DATABURRIS,BAKER,PARKER,DOWNIE,GOWD,COX
82 DATAC.A.BAKER,S.BURRIS,M.COX,J.DOWNIE,G.B.GOWD,A.S.PARKER
83 DATA374-5610,372-2143,372-1908,374-7425,372-7991,372-3697
85 PRINT:PRINT"ON WHAT DAY OF THE WEEK DOES THE FIRST"
86 PRINT"OF THE MONTH OCCUR?"
90 FORI=1TO7:PRINTTAB(4)"";STR$(I);". ";DW$(I):PRINT:NEXTI
100 INPUT"1,2,3,4,5,6,OR 7";AN$:AN=VAL(AN$)
102 INPUT"CORRECT (Y/N)";YN$
103 IFLEFT$(YN$,1)<>"Y"THEN100
105 IFAN<1ORAN>7THENPRINT"TRY AGAIN,DUMMY":GOTO85
110 IG=AN-1
150 FORW=1TO6:FORD=1TO7
152 X=7*(W-1)+D-IG
155 IFX<0THENX=0
156 IFX>M1THENX=99
160 CA%(W,D)=X
170 NEXTD,W
171 PRINTCHR$(147);
172 PRINT"WHO WORKED THE LAST WEEKEND OF":PRINT" LAST MONTH?":PRINT
175 FORI=1TO5:PRINTTAB(4)"";STR$(I);". ";DR$(I):PRINT:NEXTI
178 INPUT"1,2,3,4,OR 5";DR$:DR=VAL(DR$)
180 INPUT"CORRECT (Y/N)";YN$
182 IFLEFT$(YN$,1)<>"Y"THEN178
185 IFDR<1ORDR>6THENPRINT"DUMMY!";:GOTO178
186 ONDRGOTO190,195,200,205,188
188 FORI=1TO5:WE%(I)=DN%(I):NEXTI:GOTO210
190 FORI=1TO4:WE%(I)=DN%(I+1):NEXTI:WE%(5)=DN%(1):GOTO210
195 FORI=1TO3:WE%(I)=DN%(I+2):NEXTI:FORI=4TO5:WE%(I)=DN%(I-3):NEXTI:GOTO210
200 FORI=1TO2:WE%(I)=DN%(I+3):NEXTI:FORI=3TO5:WE%(I)=DN%(I-3):NEXTI:GOTO210
205 WE%(1)=DN%(5):FORI=2TO5:WE%(I)=DN%(I-1):NEXTI:GOTO210
210 FORI=1TOM1:AB%(I)=0:NEXTI
215 FORDN=0TO5:GOSUB4500:NEXTDN
220 REM NOW FOR THE HARD PART - ALLOTTING THE DATES TO THE GUYS (AND DOLL)
222 IFCA%(1,5)THEN259:REM 1ST WK HAS A FULL W/E
224 IFCA%(1,7)THENCL$(1,7)=DR$(DR)
226 IFCA%(1,6)THENCL$(1,6)=DR$(DR)
228 FORW=2TO6
230 IFCA%(W,5)=99GOTO315:REM OUT OF LOOP
232 X=CA%(W,5):A5=AB%(X):A6=AB%(X+1):A7=AB%(X+2):Y=WE%(W-1):BI=2^(Y-1)
234 IF(A5ANDBI)OR(A6ANDBI)OR(A7ANDBI)THEN245
236 CL$(W,5)=DR$(Y)
238 IFCA%(W,6)=99GOTO315
240 CL$(W,6)=DR$(Y)
242 IFCA%(W,7)=99GOTO315
244 CL$(W,7)=DR$(Y):GOTO258
245 Y=Y+1:IFY>5THENY=1:REM TRY NEXT DR.ON ROTA
246 BI=2^(Y-1):IF(A5ANDBI)OR(A6ANDBI)OR(A7ANDBI)THEN258
247 IFCL$(W-1,7)=DR$(Y)GOTO258:REM CAN'T WORK 2 W/ES RUNNING
248 CL$(W,5)=DR$(Y)
249 IFCA%(W,6)=99GOTO315
253 CL$(W,6)=DR$(Y)
254 IFCA%(W,7)=99GOTO315
255 CL$(W,7)=DR$(Y)
256 Y=Y-1:IFY<1THENY=5
257 WE%(W)=Y:REM TRY TO MAKE ABSENT DR. DO THE UPCOMING W/E
258 NEXTW
259 FORW=1TO6
260 IFCA%(W,5)=99GOTO315:REM OUT OF LOOP
265 X=CA%(W,5):A5=AB%(X):A6=AB%(X+1):A7=AB%(X+2):Y=WE%(W):BI=2^(Y-1)
270 IF(A5ANDBI)OR(A6ANDBI)OR(A7ANDBI)THEN280
271 CL$(W,5)=DR$(Y)
272 IFCA%(W,6)=99GOTO315
274 CL$(W,6)=DR$(Y)
275 IFCA%(W,7)=99GOTO315
279 CL$(W,7)=DR$(Y):GOTO310
280 Y=Y+1:IFY>5THENY=1:REM TRY NEXT DR. ON ROTA
282 BI=2^(Y-1):IF(A5ANDBI)OR(A6ANDBI)OR(A7ANDBI)THEN310
283 IFW-1>0ANDCL$(W-1,7)=DR$(Y)GOTO310:REM NOT 2 W/ES RUNNING
284 CL$(W,5)=DR$(Y)
286 IFCA%(W,6)=99GOTO315
288 CL$(W,6)=DR$(Y)
290 IFCA%(W,7)=99GOTO315
292 CL$(W,7)=DR$(Y)
295 Y=Y-1:IFY<1THENY=5
300 WE%(W+1)=Y:REM TRY TO MAKE ABSENT DR. DO UPCOMING W/E
310 NEXTW
315 REM W.E.S NOW ALLOCATED, OR MAY BE LEFT AS ???S
320 FORW=1TO6
325 FORD=1TO4
330 Y=CA%(W,D):IFY=99GOTO401:REM OUT OF LOOP
335 IFY=0THENCL$(W,D)="    ":GOTO400:REM SPACES FOR PRINTER
340 AB=AB%(Y):BI=2^(D-1)
345 IF(ABANDBI)GOTO370
350 IFW=1ANDD<>DRGOTO390
355 IFW=1ANDD=DRGOTO380
360 IFW>1ANDDR$(D)<>CL$(W-1,7)GOTO390
```

```
365 IFW>1ANDDR$(D)=CL$(W-1,7)GOTO380
370 IF(ABAND16)=0THENCL$(W,D)=DR$(5):GOTO400
375 GOTO400
380 IF(ABAND16)=0THENCL$(W,D)=DR$(5):GOTO400
390 CL$(W,D)=DR$(D)
400 NEXTD,W
401 FORW=1TO6:FORD=1TO7
402 IFCA%(W,D)=00RCA%(W,D)=99THENCL$(W,D)="    "
403 NEXTD,W
405 REM NOW HAVE CL$ AS DRS. NAMES OR"???" FOR EACH DATE & SPACES ELSEWHERE
410 GOSUB 10000:REM DISPLAY CALENDAR
415 PRINT:PRINT"CHANGE ONE DATE AT A TIME"
420 INPUT"ANY CHANGES";YN$
422 IFLEFT$(YN$,1)<>"Y"THEN470
425 INPUT"DATE TO CHANGE DUTY";DA$:DA=VAL(DA$)
430 IFDA<00RDA>M1THENPRINT"■DUMMY◢!":GOTO420
435 PRINT"WHICH DR. TO WORK ON ";DA$
440 PRINT"1 BAK. 2 PAR. 3 DOW. 4 GOWD 5 COX"
445 INPUTD1$:D1=VAL(D1$)
450 IFD1<1ORD1>5THENPRINT"■DUMMY◢!":GOTO440
452 FORW=1TO6:FORD=1TO7
454 IFDA=CA%(W,D)THENCL$(W,D)=DR$(D1):GOTO460
456 NEXTD,W
460 INPUT"ANY MORE CHANGES (Y/N)";YN$
465 IFLEFT$(YN$,1)="Y"THEN410
470 INPUT"SURE? POSITIVE? (Y/N)";YN$
475 IFLEFT$(YN$,1)<>"Y"THEN410
480 GOSUB10000
482 FORW=1TO6:FORD=1TO7
484 IFCL$(W,D)="???"GOTO490
485 NEXTD,W
486 GOTO515
490 FORI=1TO5
495 POKE 53281,2:FORT=1TO50:NEXTT:POKE53281,6:FORT=1TO50:NEXTT
500 NEXTI
510 GOSUB10000:PRINT"■FIX IT,PINHEAD!◢":FORT=1TO2000:NEXT:GOTO410
515 FORT=1TO2000:NEXT:REM SCAN FOR UNALLOTTED DATES COMPLETED;NOW FINAL CHOICE
520 PRINTCHR$(147);
525 POKE53280,1:POKE53281,1:PRINTCHR$(31)
530 PRINTLEFT$(CD$,4);"NOW YOU MUST CHOOSE:-":PRINT
535 PRINT"1 SAVE THIS CALL LIST ON DISK":PRINT
540 PRINT"2 SEND THIS CALL LIST TO PRINTER":PRINT
545 PRINT"3 QUIT PROGRAM":PRINT
550 INPUT"1,2, OR 3";CH$:CH=VAL(CH$)
560 IFCH<1ORCH>3THENPRINTCHR$(28);"◤WAKE UP!"CHR$(154):GOTO550
565 ONCHGOSUB7000,5000,8000
570 PRINT"ANYTHING ELSE":INPUT"Y/N";YN$
580 IFLEFT$(YN$,1)<>"Y"THENEND
585 GOTO520
4100 REM FILL ARRAY AB%(M1) WITH BINARY CODES CORR. TO DR. NOS.
4105 FORII=SDTOSD+LA
4110 AB%(II)=AB%+2^(NN-1)
4120 NEXTII
4130 RETURN
4500 PRINTCHR$(147);:REM GET ABSENCES OF EACH DOCTOR
4510 PRINT"IS DOCTOR ";DR$(DN);" AWAY THIS MONTH?"
4515 INPUT"Y/N";YN$
4520 IFLEFT$(YN$,1)<>"Y"GOTO4576
4530 PRINT"STARTING DATE OF ABSENCE"
4535 INPUTSD$:SD=VAL(SD$)
4536 IFSD>M1THENPRINT"THIS IS WRONG: CHANGE IT":GOTO4530
4540 PRINT"FINISHING DATE OF ABSENCE"
4545 INPUTFD$:FD=VAL(FD$):LA=FD-SD
4546 IFFD>M1THENPRINT"THIS IS WRONG: CHANGE IT":GOTO4540
4550 INPUT"ALL CORRECT (Y/N)";YN$
4555 IFLEFT$(YN$,1)<>"Y"THEN4530
4556 IFDN=0THENAW$(1)=SD$+"-"+FD$:GOTO4600
4557 IFDN=1THENAW$(0)=SD$+"-"+FD$:GOTO4590
4558 IFDN=2THENAW$(5)=SD$+"-"+FD$:GOTO4590
4560 IFDN=3THENAW$(3)=SD$+"-"+FD$:GOTO4590
4565 IFDN=4THENAW$(4)=SD$+"-"+FD$:GOTO4590
4575 IFDN=5THENAW$(2)=SD$+"-"+FD$:GOTO4590
4576 IFDN=0THENAW$(1)="NIL":RETURN
4577 IFDN=1THENAW$(0)="NIL":RETURN
4578 IFDN=2THENAW$(5)="NIL":RETURN
4580 IFDN=3THENAW$(3)="NIL":RETURN
4585 IFDN=4THENAW$(4)="NIL":RETURN
4586 IFDN=5THENAW$(2)="NIL":RETURN
4590 NN=DN:GOSUB4100
4600 PRINT"ANY MORE THIS MONTH (Y/N)"
4602 INPUTYN$
4605 IFLEFT$(YN$,1)<>"Y"THENRETURN
4610 IFDN=0THENAW$(1)=AW$(1)+",":GOTO4530
4615 IFDN=1THENAW$(0)=AW$(0)+",":GOTO4530
4620 IFDN=2THENAW$(5)=AW$(5)+",":GOTO4530
4625 IFDN=3THENAW$(3)=AW$(3)+",":GOTO4530
4630 IFDN=4THENAW$(4)=AW$(4)+",":GOTO4530
4635 IFDN=5THENAW$(2)=AW$(2)+",":GOTO4530
5000 REM START PRINTER PROGRAMS
5002 INPUT"HOW MANY COPIES";C
5005 INPUT"CORRECT Y/N";YN$
5008 IFLEFT$(YN$,1)<>"Y"THEN5002
5010 FORN=1TOC
5015 ES$=CHR$(27):DW$=CHR$(14):DO$=CHR$(20):LF$=CHR$(10):TA$=CHR$(9)
5020 OPEN4,4:A=10:B=16
5030 PRINT#4,ES$CHR$(68)CHR$(A)CHR$(B)CHR$(0);
5035 PRINT#4,ES$CHR$(69);
5040 PRINT#4,TA$"ROYAL INLAND HOSPITAL"
5042 PRINT#4,TA$TA$"KAMLOOPS, B.C."LF$
5043 PRINT#4,TA$"EMERGENCY OBS-GYN ROTA"LF$
5044 PRINT#4,ES$CHR$(70);:PRINT#4,TA$MO$;",";YR$;". (5.00 P.M. TO 8.00 A.M.
5045 GOSUB5999
5046 FORW=1TO6:FORD=1TO7
5047 IFCA%(W,D)=99THEN5056
5048 IFCA%(W,D)=0THEN5055
5049 M=CA%(W,D)
5050 PRINT#4,TA$;"DATE ";RIGHT$(STR$(M),2);
5051 FORJ=1TO34:PRINT#4,".";:NEXTJ
5052 PRINT#4,"DOCTOR ";CL$(W,D)
5055 NEXTD,W
5056 GOSUB5999
5060 PRINT#4,ES$CHR$(69);
5065 PRINT#4,TA$TA$"ABSENCES :-"LF$
5070 PRINT#4,ES$CHR$(70);
5075 FORI=0TO5
5080 PRINT#4,TA$TA$DO$(I);
5085 L=LEN(DO$(I)):FORJ=1TO(20-L):PRINT#4,".";:NEXTJ
5090 PRINT#4,"DATES ";AW$(I)
5095 NEXTI
5100 PRINT#4,LF$
```

```
5110 GOSUB5999
5115 FORI=0TO5
5120 PRINT#4,TA$TA$DO$(I);
5125 L=LEN(DO$(I)):FORJ=1TO(20-L):PRINT#4,".";:NEXTJ
5130 PRINT#4,PH$(I)
5135 NEXTI
5140 PRINT#4,CHR$(12):CLOSE4
5145 NEXTN
5150 RETURN
5999 FORK=1TO80:PRINT#4,"*";:NEXTK:PRINT#4,LF$:RETURN
7000 PRINTCHR$(147);"INSERT FILE DISK IN DRIVE"
7002 PRINT"PRESS RETURN WHEN READY"
7004 GETA$:IFA$<>CHR$(13)THEN7004
7005 PRINT"FILE CREATION"
7006 PRINT:PRINT"FOR ";MO$;", ";YR$
7007 OPEN15,8,15:PRINT#15,"IO"
7010 A$="0:":B$=",S,W":N$=A$+LM$+YR$+B$
7015 OPEN8,8,8,N$
7016 GOSUB7200
7020 FORW=1TO6:FORD=1TO7
7025 IFCA%(W,D)=0GOTO7050
7028 IFCA%(W,D)=99GOTO7060
7030 Q$=STR$(CA%(W,D)):R$=CL$(W,D)
7040 PRINT#8,Q$;",";R$
7050 NEXTD,W
7060 FORII=0TO5
7070 PRINT#8,DO$(II);",";AW$(II)
7080 NEXTII
7160 CLOSE8:GOSUB7200
7170 PRINT:PRINT"FILE FOR ";MO$;" ";YR$;" IS WRITTEN"
7180 GOSUB7200
7190 CLOSE15:RETURN
7200 INPUT#15,E,E$,E1,E2
7210 IFETHENPRINTE$:STOP
7220 RETURN
8000 POKE53280,14:POKE53281,6:PRINTCHR$(154):RETURN
10000 REM DISPLAY CALENDAR ON SCREEN
10002 PRINTCHR$(147);
10005 PRINTTAB(5)"MON";TAB(10)"TUE";TAB(15)"WED";TAB(20)"THU";
10006 PRINTTAB(25)"FRI";TAB(30)"SAT";TAB(35)"SUN"
10007 GOSUB10100
10010 FORWW=1TO6
10020 FORDD=1TO7
10025 IFCA%(WW,DD)=99THEN10056
10030 PP=5*DD
10040 IFCA%(WW,DD)=0THENQQ$="    ":GOTO10050
10045 QQ$=STR$(CA%(WW,DD))
10050 PRINTTAB(PP)RIGHT$(QQ$,2);
10055 NEXTDD
10056 PRINT
10057 FORDD=1TO7
10058 IFCA%(WW,DD)=99THEN10080
10060 PP=5*DD
10062 PRINTTAB(PP)LEFT$(CL$(WW,DD),3);
10065 NEXTDD
10070 PRINT:PRINT
10075 NEXTWW
10080 RETURN
10100 FORII=1TO40:PRINTCHR$(192);:NEXTII:PRINT:RETURN
```



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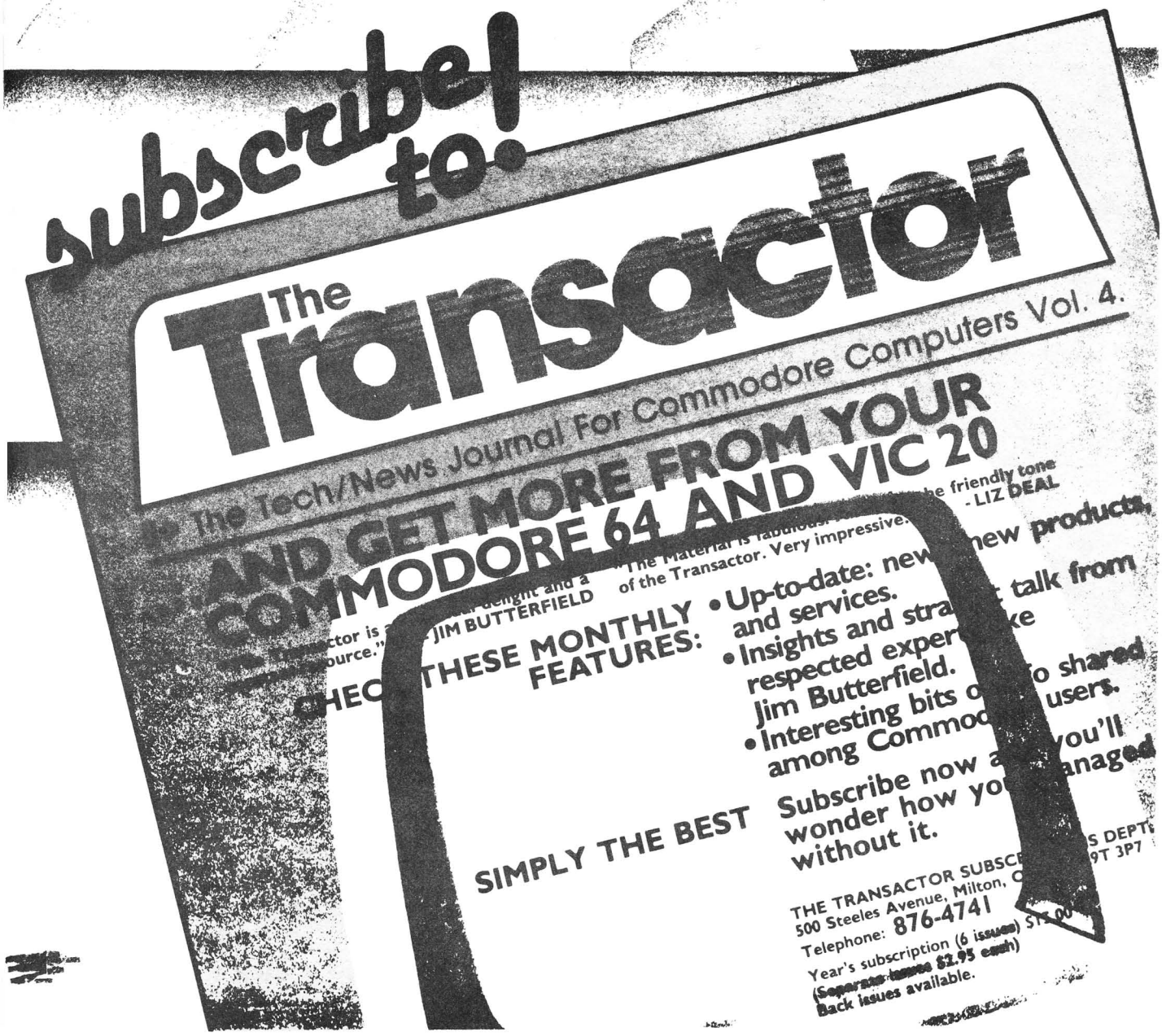

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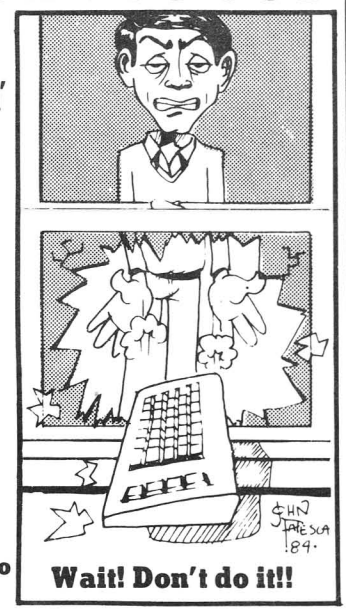

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Resources

RESOURCES:

Here are the addresses of some user group newsletters quoted in recent issues. Many thanks for the great job they are doing in their local areas and for keeping us informed about their work!

COMAL Today, c/o Len Lindsay, 5501 Groveland Terrace, Madison WI 53716
Commodore Computer Club of Toledo Newsletter, 734 Donna Dr, Temperance MI 48182
Commodore International, a staff newsletter published by Commodore Corporate
Commodore 64 Users Group Newsletter, c/o Clearfield UT
Commodore Users Group of St. Louis,c/o Richard Schumacher,Box 6653, St.Louis MO63125
Comm'putoy Cult, c/o SDPUG, P.O. Box 7776, San Diego CA 92107
Eight Squared c/o J.A. Skelton, P.O. Box 76, Mt. Holly Springs PA 17065
Electric Magazine, c/o Bob Shannon, 33175 Ocean View Dr., Ft. Bragg CA 95437
The Exchange, c/o Bill McDannell, 1410 S. McArthur, Springfield IL 62704
The Hacker Rag, c/o Rich Westerman, R.R #1, Box 279, St. Anne IL 60961
Hardcopy, c/o CHUG, John Walker, 8738 Wildforest, Houston TX 77088
Infoworld, 375 Cochituate Rd., Framingham MA 01701 (magazine)
Fox Valley Users Group Newsletter, P.O. Box 28, North Aurora IL 60542
Joplin [MO] Commodore Computer User's Group Newsletter,
c/o Dale Connely, 422 Florida Av., Joplin MO 64801
Mid-Missouri Commodore Club Newsletter,
c/o Jim Whitacre, 780 E. Park Lane, Columbia MO 65201
Mountain Computer Society Data Loops, P.O. Box 1154, Sandy UT 84091
NorthWest Users Guide, 3808 S.E. Licyntra Ct., Milwaukie OR 97222
NYCig, c/o NYACC, Box 106, Church St. Station, New York NY 10008
Peeks and Pokes, BCUG, Bloomington IL
SuperPET Gazette, c/o Dick Barnes, Editor, Box 411, Hatteras NC 29743
The Use*Letter, South Bay CUG, c/o Craig Whittler, 17306 Ermanita #3, Torrance CA 90504
SFVCUG Users Port, c/o Tom Lynch, 21208 Nashville, Chatsworth CA 91311
WCUC News, Westmoreland [PA] Computer Users Club, Commodore Section,
c/o Don Miller, 3021 Ben Venue Dr., Greensburg PA 15601
Western Illinois PUG Newsletter, Quincy IL

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